

VDOIHI

Bağımlı ve Bir Bağımsız Olasılıklı
Farklı Dizilimsiz Bağımlı Durumlu
Simetrisinin İlk Herhangi İki ve Son
Durumunun Bulunabileceği Olaylara
Göre Tek Kalan Düzgün Olmayan
Simetrik Olasılık

Cilt 2.3.3.3.7.1.1.489

İsmail YILMAZ

Matematik / İstatistik / Olasılık

ISBN: 978-625-01-1113-0

© 1. e-Basım, Mayıs 2023

VDOİHİ Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık Cilt 2.3.3.3.7.1.1.489

İsmail YILMAZ

Copyright © 2023 İsmail YILMAZ

Bu kitabın (cildin) bütün hakları yazara aittir. Yazarın yazılı izni olmaksızın, kitabın tümünün veya bir kısmının elektronik, mekanik ya da fotokopi yoluyla basımı, yayımı, çoğaltımı ve dağıtımını yapılamaz.

KÜTÜPHANE BİLGİLERİ

Yılmaz, İsmail.

VDOİHİ Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık-Cilt 2.3.3.3.7.1.1.489 / İsmail YILMAZ

e-Basım, s. XXVI + 731

Kaynakça yok, dizin var

ISBN: 978-625-01-1113-0

1. Bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

Dili: Türkçe + Matematik Mantık



K. Atatürk

Türkiye Cumhuriyeti Devleti
Kuruluşunun
100. Yılı Anısına

DÜZELTME

Bu cilt için

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i}$$

simgesi yerine

$$fz^{DOST}_{j_s, j_{ik}, j^{sa}, j_i}$$

simgesi olmalı.

Yazar Hakkında

İsmail YILMAZ; Hamzabey Köyü, Yeniçağa, Bolu'da 1973 yılında doğdu. İlkokulu köyünde tamamladıktan sonra, ortaokulu Yeniçağa ortaokulunda tamamladı. Liseyi Ankara Ömer Seyfettin ve Gazi Çiftliği Liselerinde okudu. Lisans eğitimini Çukurova Üniversitesi Fen Edebiyat Fakültesi Fizik bölümünde, yüksek lisans eğitimini Sakarya Üniversitesi Fen Bilimleri Enstitüsü Fizik Anabilim Dalında ve doktora eğitimini Gazi Üniversitesi Eğitim Bilimleri Enstitüsü Fen Bilgisi Eğitimi Anabilim Dalında tamamladı. Fen Bilgisi Eğitiminde; Newton'un hareket yasaları, elektrik ve manyetizmanın prosedürel ve deklaratif bilgi yapılarıyla birlikte matematik mantık yapıları üzerine çalışmalar yapmıştır. Yazarın farklı alanlarda yapmış olduğu çalışmalar arasında ölçme ve değerlendirmeye yönelik çalışmaları da mevcuttur.

VDOİHİ

Veri Değişkenleri Olasılık ve İhtimal Hesaplama İstatistiği (VDOİHİ) ile olasılık ve ihtimal yasa konumuna getirilmiştir.

VDOİHİ'de Olasılık;

- ✓ Makinaların insan gibi düşünebilmesini, karar verebilmesini ve davranabilmesini sağlayacak gerçek yapay zekayla ilişkilendirilmiştir.
- ✓ Dillerin matematik yapısı olduğu gösterilmiştir.
- ✓ Tüm tabanlarda, tüm dağılım türlerinde ve istenildiğinde dağılım türü ve tabanı değiştirerek çalışabilecek elektronik teknolojisinin temelidir.
- ✓ Teorik kabullerle genetikle ilişkilendirilmiştir.
- ✓ Bilgi merkezli değerlendirme yöntemidir.

Sanırım bilgi ve teknolojideki kaderimiz veriyle ilişkilendirilmiş.

İÇİNDEKİLER

Bağımlı ve Bir Bağımsız Olasılıklı Farklı Dizilimsiz Dağılımlar	1
Simetriden Seçilen Dört Duruma Göre Tek Kalan Düzgün Olmayan Simetrik Olasılıklar	3
Dizin	

GÜLDÜNYA

Simge ve Kısaltmalar

n : olay sayısı

n : bağımlı olay sayısı

m : bağımsız olay sayısı

l : bağımsız durum sayısı

L : simetrimin bağımsız durum sayısı

l : simetrimin bağımlı durumlarından önce bulunan bağımsız durum sayısı

L : simetrimin bağımlı durumlarından sonra bulunan bağımsız durum sayısı

k : simetrimin bağımlı durumları arasındaki bağımsız durumların sayısı

k : dağılımın başladığı bağımlı durumun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası

l : ilgilenilen bağımlı durumun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası

l : simetrimin ilk bağımlı durumunun, bağımlı olasılık farklı dizilimsiz dağılımın son olayı için sırası. Simetrimin sonuncu bağımlı olayındaki durumun, bağımlı olasılık farklı dizilimsiz dağılımlardaki sırası

l_i : simetrimin son bağımlı durumunun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası. Simetrimin birinci bağımlı olayındaki durumun, bağımlı olasılık farklı dizilimsiz dağılımlardaki sırası

l_s : simetrimin ilk bağımlı durumunun, bağımlı olasılıklı farklı dizilimsiz

dağılımlardaki sırası. Simetrimin sonuncu bağımlı olayındaki durumun, bağımlı olasılık farklı dizilimsiz dağılımlardaki sırası

l_{ik} : simetrimin aranacağı durumdan önce bulunan bağımlı durumun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası veya simetrimin iki bağımlı durumu arasında bağımsız durum bulunduğunda, bağımsız durumdan önceki bağımlı durumun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası

l_{sa} : simetrimin aranacağı bağımlı durumunun, bağımlı olasılıklı farklı dizilimsiz dağılımlardaki sırası. Simetrimin aranacağı bağımlı olayındaki durumun, bağımlı olasılık farklı dizilimsiz dağılımlardaki sırası

j : son olaydan/(alt olay) ilk olaya doğru aranılan olayın sırası

j_i : simetrimin son bağımlı durumunun, bağımlı olasılıklı dağılımlarda bulunabileceği olayların, son olaydan itibaren sırası

j_{sa}^i : simetriyi oluşturan bağımlı durumlar arasında simetrimin son bağımlı durumunun bulunduğu olayın, simetrimin son olayından itibaren sırası ($j_{sa}^i = s$)

j_{ik} : simetrimin ikinci olayındaki durumun, gelebileceği olasılık dağılımlardaki olayın sırası (son olaydan ilk olaya doğru) veya simetride, simetrimin aranacağı durumdan önce bulunan bağımlı durumun, bağımlı olasılıklı dağılımlarda bulunabileceği olayların, son olaydan itibaren sırası veya simetrimin iki bağımlı

durum arasında bağımsız durumun bulunduğu bağımsız durumdan önceki bağımlı durumun bağımlı olasılıklı dağılımlarda bulunabileceği olayların son olaydan itibaren sırası

j_{sa}^{ik} : j_{ik} 'da bulunan durumun simetriyi oluşturan bağımlı durumlar arasında bulunduğu olayın son olaydan itibaren sırası

$j_{x_{ik}}$: simetrinin ikinci olayındaki durumun, olasılık dağılımlarının son olaydan itibaren bulunabileceği olayın sırası

j_s : simetrinin ilk bağımlı durumunun, bağımlı olasılıklı dağılımlarda bulunabileceği olayların, son olaydan itibaren sırası

j_{sa}^s : simetriyi oluşturan bağımlı durumlar arasında simetrinin ilk bağımlı durumunun bulunduğu olayın, simetrinin son olayından itibaren sırası ($j_{sa}^s = 1$)

j_{sa} : simetriyi oluşturan bağımlı durumlar arasında simetrinin aranacağı durumun bulunduğu olayın, simetrinin son olayından itibaren sırası

j^{sa} : j_{sa} 'da bulunan durumun bağımlı olasılıklı dağılımda bulunduğu olayın son olaydan itibaren sırası

D : bağımlı durum sayısı

D_i : olayın durum sayısı

s : simetrinin bağımlı durum sayısı

s : simetrik durum sayısı. Simetrinin bağımlı ve bağımsız durum sayısı

m : olasılık

M : olasılık dağılım sayısı

U : uyum eşitliği

u : uyum derecesi

s_i : olasılık dağılımı

${}_{fz}S_{j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}_{fz}S_{j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}_{fz}S_{j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}_{fz}^0S_{j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}_{fz}^0S_{j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımsız simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}_{fz}^0S_{j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımlı simetrinin son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_Z S_{j_s^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin durumuna bağlı tek kalan simetrik olasılık

$f_Z S_{j_s^{sa},0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin durumuna bağlı tek kalan simetrik olasılık

$f_Z S_{j_s^{sa},D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin durumuna bağlı tek kalan simetrik olasılık

$f_Z S_{j_s,j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_Z S_{j_s,j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_Z S_{j_s,j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{Z,0} S_{j_s,j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{Z,0} S_{j_s,j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı

durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{Z,0} S_{j_s,j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_Z S_{j_s,j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_Z S_{j_s,j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_Z S_{j_s,j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_Z S_{j_s,j_s^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_Z S_{j_s,j_s^{sa},0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi bir

durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_s, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j^{sa}, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_{ik}, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin herhangi iki durumuna bağlı tek kalan simetrik olasılık

$fzS_{j_{ik}, j^{sa}, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin herhangi iki durumuna bağlı tek kalan simetrik olasılık

$fzS_{j_{ik}, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin herhangi iki durumuna bağlı tek kalan simetrik olasılık

fzS_{j_{ik}, j_i}^{DST} : bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin her durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_{ik}, j_i, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin her durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_{ik}, j_i, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin her durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j^{sa},0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j^{sa},D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_z S_{j_s,j_{ik},j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_z S_{j_s,j_{ik},j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_z S_{j_s,j_{ik},j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_z S_{j_s,j_{ik},j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_z S_{j_s,j_{ik},j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0 f_z S_{j_s,j_{ik},j_i,D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_z S_{j_s,j_{ik},j^{sa},j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$f_z S_{j_s,j_{ik},j^{sa},j_i,0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, j_i, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, j_i, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, j_i, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0S_{j_s, j_{ik}, j^{sa}, j_i}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0S_{j_s, j_{ik}, j^{sa}, j_i, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

${}^0S_{j_s, j_{ik}, j^{sa}, j_i, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda bağımlı

simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j^{sa}, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fz,0S_{\Rightarrow j_s, j_{ik}, j^{sa}}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fz,0S_{\Rightarrow j_s, j_{ik}, j^{sa}, 0}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fz,0S_{\Rightarrow j_s, j_{ik}, j^{sa}, D}^{DST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımlı simetrisinin ilk ve herhangi

iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, 0}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, D}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, 0}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, D}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı

durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

${}^0 fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

${}^0 fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, 0}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

${}^0 fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j_i, D}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j^{sa}, j_i}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow}_{j_s, j_{ik}, j^{sa}, j_i, 0}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu

bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir

bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{\Rightarrow} j_s, j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz, 0 \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz,0 \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz,0 \overset{DST}{\Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{fz \Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{fz \Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

${}^0 \overset{DST}{fz \Rightarrow} j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

herhangi iki ve son durumuna bağlı tek kalan simetrik olasılık

$fz \overset{DSSST}{S}_{j_i}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz \overset{DSSST}{S}_{j_i, 0}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz \overset{DSSST}{S}_{j_i, D}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 \overset{DSSST}{fz \Rightarrow} j_i$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 \overset{DSSST}{fz \Rightarrow} j_i, 0$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 \overset{DSSST}{fz \Rightarrow} j_i, D$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_Z S_{j_s^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin durumuna bağlı tek kalan düzgün simetrik olasılık

$f_Z S_{j_s^{sa},0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin durumuna bağlı tek kalan düzgün simetrik olasılık

$f_Z S_{j_s^{sa},D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin durumuna bağlı tek kalan düzgün simetrik olasılık

$f_Z S_{j_s,ji}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_Z S_{j_s,ji,0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_Z S_{j_s,ji,D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_{Z,0} S_{j_s,ji}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_{Z,0} S_{j_s,ji,0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_{Z,0} S_{j_s,ji,D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 S_{j_s,ji}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 f_Z S_{j_s,ji,0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0 f_Z S_{j_s,ji,D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_Z S_{j_s,j^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_Z S_{j_s,j^{sa},0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu

bağımsız simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j^{sa}, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j^{sa}, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j^{sa}, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_{ik}, j^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin herhangi iki durumuna bağlı tek kalan düzgün simetrik olasılık

$fzS_{j_{ik}, j^{sa}, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin herhangi iki durumuna bağlı tek kalan düzgün simetrik olasılık

$fzS_{j_{ik}, j^{sa}, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu

bağımlı simetrisinin herhangi iki durumuna bağlı tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s, j_{ik}, j_i}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun

bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s, j_{ik}, j_i, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s, j_{ik}, j_i, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i, 0}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i, D}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i^{sa}, j_i}^{DSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son

durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j^{sa},j_i,0}^{DSSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_{z,0}S_{j_s,j_{ik},j^{sa},j_i,D}^{DSSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s,j_{ik},j^{sa},j_i}^{DSSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s,j_{ik},j^{sa},j_i,0}^{DSSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

${}^0S_{j_s,j_{ik},j^{sa},j_i,D}^{DSSST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün simetrik olasılık

$f_zS_{j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_zS_{j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_zS_{j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_zS_{j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu

simetrisinin durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s^{sa},0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s^{sa},D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s,j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s,j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s,j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_{Z,0} S_{j_s,j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_{Z,0} S_{j_s,j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve son

durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_{Z,0} S_{j_s,j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0 S_{j_s,j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0 S_{j_s,j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0 S_{j_s,j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s,j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$f_Z S_{j_s,j^{sa},0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j^{sa}, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j^{sa}, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j^{sa}, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi bir durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_{ik}, j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin herhangi iki durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_{ik}, j^{sa}, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin herhangi iki durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_{ik}, j^{sa}, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin herhangi iki durumuna

bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j^{sa}, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s, j_{ik}, j^{sa}, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya

bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0fzS_{j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0fzS_{j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{j_s, j_{ik}, j_i^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{j_s, j_{ik}, j_i^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı

durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s,j_{ik},j^{sa},j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{j_s,j_{ik},j^{sa},j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{fz,j_s,j_{ik},j^{sa},j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{fz,j_s,j_{ik},j^{sa},j_i,0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

${}^0S_{fz,j_s,j_{ik},j^{sa},j_i,D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s,j_{ik},j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s,j_{ik},j^{sa},0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s,j_{ik},j^{sa},D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{\Rightarrow j_s,j_{ik},j^{sa}}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{\Rightarrow j_s,j_{ik},j^{sa},0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{\Rightarrow j_s,j_{ik},j^{sa},D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{\Rightarrow j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{\Rightarrow j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0S_{\Rightarrow j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0fzS_{\Rightarrow j_s, j_{ik}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0fzS_{\Rightarrow j_s, j_{ik}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0fzS_{\Rightarrow j_s, j_{ik}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fzS_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0 \mathcal{S}_{\Rightarrow j_s, j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz \mathcal{S}_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz \mathcal{S}_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz \mathcal{S}_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumda bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz, 0 \mathcal{S}_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumda simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

$fz,0S_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0S_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0S_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, 0}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

${}^0S_{\Rightarrow j_s, \Rightarrow j_{ik}, j^{sa}, j_i, D}^{DOST}$: bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız veya bağımlı-bağımsız veya bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı tek kalan düzgün olmayan simetrik olasılık

E2

BAĞIMLI ve BİR BAĞIMSIZ OLASILIKLI FARKLI DİZİLİMSİZ DAĞILIMLAR

Bağımlı ve Bir Bağımsız Olasılıklı Farklı Dizilimsiz Dağılımlar

- Simetrik Olasılık
- Toplam Düzgün Simetrik Olasılık
- Toplam Düzgün Olmayan Simetrik Olasılık
- İlk Simetrik Olasılık
- İlk Düzgün Simetrik Olasılık
- İlk Düzgün Olmayan Simetrik Olasılık
- Tek Kalan Simetrik Olasılık
- Tek Kalan Düzgün Simetrik Olasılık
- Tek Kalan Düzgün Olmayan Simetrik Olasılık
- Kalan Simetrik Olasılık
- Kalan Düzgün Simetrik Olasılık
- Kalan Düzgün Olmayan Simetrik Olasılık

bu yüğe sıralanmasıyla elde edilebilen kurallı tablolar kullanılmaktadır. Farklı dizilimsiz dağılımlarda durumların küçükten-büyüğe sıralama için verilen eşitliklerde kullanılan durum sayısının düzenlenmesiyle, büyükten-küçüğe sıralama durumlarının eşitlikleri elde edilebilir.

Farklı dizilimsiz dağılımlar, dağılımın ilk durumuyla başlayan (bunun yerine farklı dizilimsiz dağılımlarda simetrisinin ilk durumuyla başlayan dağılımlar), dağılımın ilk durumu hariçinde dağılımın herhangi bir durumuyla başlayan dağılımlar (bunun yerine farklı dizilimsiz dağılımlarda simetride bulunmayan bir durumla başlayan dağılımlar) ve dağılımın ilk durumu hariçinde ilk dağılımının başladığı farklı ikinci durumla başlayıp simetrisinin ilk durumuyla başlayan dağılımların sonuna kadar olan dağılımlarda (bunun yerine farklı dizilimsiz dağılımlarda simetride bulunmayan diğer durumlarla başlayan dağılımlar) simetrik, düzgün simetrik, düzgün olmayan simetrik v.d. incelenir. Bağımlı dağılımlardaki incelenen başlıklar, bağımlı ve bir bağımsız olasılıklı dağılımlarda, bağımsız durumla ve bağımlı durumla başlayan dağılımlar olarak da incelenir.

Bağımlı dağılım ve bir bağımsız olasılıklı durumla oluşturulabilen dağılımlara ve bağımlı olasılıklı dağılımların kendi olay sayısından (bağımlı olay sayısı) büyük olmasına (bağımsız olay sayısı) dağılımla bağımlı ve bir bağımsız olasılıklı dağılımlar elde edilir. Farklı dağılım farklı dizilimsiz dağılımlarda incelendiğinde, bu dağılımlara bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımlar elde edilir. Bağımlı ve bir bağımsız olasılıklı dağılımlar; bağımlı dağılımlara, bağımsız durumlar ilk durumundan dağıtılmaya başlanarak tabloları elde edilir. Bu bölümde verilen eşitlikler, bu yöntemle elde edilen kurallı tablolara göre verilmektedir. Farklı dizilimsiz dağılımlarda durumların küçükten-

Bağımlı dağılımlar; a) olasılık dağılımlardaki simetrik, (toplam) düzgün simetrik ve (toplam) düzgün olmayan simetrik b) ilk simetrik, ilk düzgün simetrik ve ilk düzgün olmayan simetrik c) tek kalan simetrik, tek kalan düzgün simetrik ve tek kalan düzgün olmayan simetrik ve d) kalan simetrik, kalan düzgün simetrik ve kalan düzgün olmayan simetrik olasılıklar olarak incelendiğinden, bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımlarda bu başlıklarla incelenmekle birlikte, bu simetrik olasılıkların bağımsız durumla başlayan ve bağımlı durumlarıyla başlayan dağılımlara göre de tanım eşitlikleri verilmektedir.

Farklı dizilimsiz dağılımlarda simetrinin durumlarının olasılık dağılımındaki sırasına göre simetrik olasılıkları etkilediğinden, bu bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımları da etkiler. Bu nedenle bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımlarda, simetrinin durumlarının bulunabileceği olaylara göre simetrik olasılık eşitlikleri, simetrinin durumlarının olasılık dağılımındaki sıralamalarına göre ayrı ayrı verilecektir. Bu eşitliklerin elde edilmesinde bağımlı olasılıklı farklı dizilimsiz dağılımlarda simetrinin durumlarının bulunabileceği olaylara göre çıkarılan eşitlikler kullanılmaktadır. Bu eşitlikler, bir bağımlı ve bir bağımsız olasılıklı dağılımlar için VDO'yu Çift Durumlu olarak çıkarılan eşitliklerle birleştirilerek, bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımların yeni eşitlikleri elde edilecektir. Eşitlikleri adlandırılmasında bağımlı olasılıklı farklı dizilimsiz dağılımlarda kullanılan adlandırmalar kullanılacaktır. Bu adlandırma simetrinin bağımlı ve bağımsız durumlarına göre ve dağılımın bağımsız veya bağımlı durumla başlamasına göre "Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı/bağımsız-bağımlı/bağımlı-bir bağımsız/bağımlı-bağımsız/bağımsız-bağımsız durumlu/bağımsız/bağımsız/bağımlı" kelimeleri getirilerek, simetrinin bağımlı durumlarının bulunabileceği olaylara göre bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz adları elde edilecektir. Simetriden seçilen durumların bulunabileceği olaylara göre simetrik, düzgün simetrik veya düzgün olmayan simetrik olasılık için birden fazla ad kullanılması durumunda gerekmedikçe yeni tanımlama yapılmayacaktır.

Simetrinin durumlarının bağımlı olasılık farklı dizilimsiz dağılımlardaki sırasına göre verilen eşitliklerdeki toplam ve sınırların sınır değerleri, simetrinin küçükten-büyükçe sıralanan dağılımlarına göre verildiğinden, bu dağılımlarda da aynı sıralama kullanılmaya devam edilecektir. Bağımlı olasılıklı farklı dizilimsiz dağılımlarda olduğu gibi bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımlarda da aynı eşitliklerde simetrinin durum sayıları düzenlenerek küçükten-büyükçe sıralanan dağılımlar için de simetrik olasılık eşitlikleri elde edilecektir.

Bu eşitlikte bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz dağılımlardan, bağımsız olasılıklı durumla başlayıp ilk bağımlı durumu bağımlı olasılıklı dağılımın ilk bağımlı durumuyla başlayan dağılımın başlayabileceği diğer bir bağımlı durum olan ve bağımsız olasılıklı durumla başlayan dağılımın aynı ilk bağımlı durumuyla başlayan dağılımlarda, simetrinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılığın eşitlikleri verilmektedir.

SİMETRİDEN SEÇİLEN DÖRT DURUMA GÖRE TEK KALAN DÜZGÜN OLMAYAN SİMETRİK OLASILIK

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S(j_s, j_{ik}, j_{sa}^{ik}) = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{sa}=j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_{sa}+j_{sa}-l-s+1} \sum_{j_i=s+1}^{l_{sa}+j_{sa}-l-s+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

GÜLDÜNYA

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{l_i!}{(D + j_i - n - l_i)! \cdot (j_i)!} + \\
& \sum_{j_i = j^{sa} + j_{sa}^{ik} - j_{sa}}^n \sum_{j_{sa} = j_{sa} + 1}^{(l_{sa} - 1)} \sum_{j_s = l_{sa} + j_{sa} - l - s + 2}^{(l_i - l + 1)} \sum_{j_{sa} = j_{sa} + 1}^{(j_s - j_{sa} + 1)} \\
& \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_{k_2} - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_{k_1}} \\
& \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k_2})} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
\end{aligned}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{(\cdot)} \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(\cdot)} (j^{sa}=j_i+j_{sa} \quad j_i=1 \quad l_{sa}+j_{sa}-l-s+1)$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_i+j_s-j_{ik}-l_{k1}}^{(n_i-j_s+1)} n_{ik}=n_i+j_s-j_{ik}-l_{k1}$$

$$(n_{sa}=n_i+j_{ik}-j^{sa}) \quad n_s=n_{sa}+j^{sa}-j_i$$

$$\frac{(n_{ik} + j_{ik} - s - l_{k2})!}{(n_{ik} + j_{ik} - s - l_{k2} - 1)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l = l \wedge l_i = D + s - l \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - l_{k1} + 1 = l_s - j_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_{k1} \geq 0 \wedge$$

$$j_i = 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k1}, j_{sa}^{ik}, l_{k2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_{k1} \wedge$$

$$l_{k2}: z = 2 \wedge l_{k2} = l_{k1} + l_{k2} \Rightarrow$$

$$\begin{aligned}
fz S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
&\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_{ik}+j_{sa}^{ik}-l-s+1} \sum_{j_i=s+1}^{n_{is}+j_s-j_{ik}-l_{ik}} \\
&\sum_{n_i=n+l_{ik}}^n \sum_{(n_{is}=n+l_{ik}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{ik}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{ik}} \\
&\frac{(n_{ik}+j_{ik}-j_s-1)! \cdot (n_{sa}-j^{sa}-j_i-1)!}{(n_{sa}=n+l_{ik}-j_s+1) \cdot (n_s=n-j_i)} \\
&\frac{(n_s - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
&\frac{(n_{is} - j_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!} \\
&\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
&\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
&\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
&\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
&\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
&\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
&\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
&\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_{ik}+j_{sa}^{ik}-l-s+2}^{l_i-l+1}
\end{aligned}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_i - j^{s_a} - 1)! \cdot (n_{s_a} + j_i - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} - l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{j_s=j_{i_k}-j_{s_a}^{i_k}+1}^{()}$$

$$\sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}} \sum_{j^{s_a}=j_i+j_{s_a}-s}^{()} \sum_{j_i=s+1}^{l_{i_k}+j_{s_a}^{i_k}-l-s+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2}}^{()} \sum_{n_s=n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_s+s-l} \sum_{j_i=s+1}^{n} \sum_{(n_i=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l - 1)!}{(j^{sa} + l_i - j_i - l_{sa} - 1)! \cdot (j_i + j_{sa} - l - s)!} \cdot \\
 & \frac{(l_i - l)!}{(l_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \sum_{j_{ik}=n+lk_1}^{n-l} \sum_{j_s=j_{ik}-j_{sa}+1}^{l_s-l} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+lk_1}^n \sum_{(n_{is}=n+lk_1-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+lk_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-lk_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-lk_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_{sa}+1)} \sum_{j_{ik}=j^{sa}+j_{sa}-j_{sa}}^{(j^{sa}+j_{sa}-s)} \sum_{j_i=s+1}^{(j_i)} \sum_{n_i=n+l_k}^{(n+l_k-j_{sa})} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{(n_{sa}=n_{ik}+j^{sa}-k_2)}^{(n_{sa}+j^{sa}-j_i)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa})! \cdot (n + j_{sa} - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n \wedge l \neq i \wedge l \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa} + 1 \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_i-j_{ik}-\mathbb{k}_1)}^{n_{is}+j_i-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{ik}+j_i-j_{ik}-\mathbb{k}_2)}^{(n_{ik}+j_i-j_{ik}-\mathbb{k}_2)} \sum_{(n_{sa}+j_i-j_{sa})}^{(n_{sa}+j_i-j_{sa})}$$

$$\sum_{(n-j^{sa}+1)}^{(n-j^{sa}+1)} \sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)}$$

$$\frac{(n_i - n_{is})}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{is} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜMVA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-lk_2)}^{(\quad)} \sum_{n_s=n_{is}+j_s-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - \dots)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^s) \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D)}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n$
 $1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_s \wedge$
 $j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} - j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$
 $l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \wedge$
 $D \geq n < n \wedge I = \dots = 0 \wedge$
 $j_s \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa}^i - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$
 $s: \{ \dots, lk_1, j_{sa}^{ik}, lk_2, j_s, \dots, j_{sa}^i \}$
 $s \geq 4 \wedge \dots = s + lk \wedge$
 $lk_z: z = 2 \wedge lk_1 = lk_2 = 2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j_i - j^{s_a} - 1)! \cdot (n_{s_a} + j_i - j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n_{i_s} - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_i - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} - l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{\binom{D}{j_s}} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{\binom{D}{j_s}} \\
 & \sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}}^{(l_{i_k}+j_{s_a}^{i_k}-l-s+1)} \sum_{(j^{s_a}=j_{s_a}+1)} \sum_{j_i=j^{s_a}+s-j_{s_a}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{(n_{s_a}=n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})}^{\binom{D}{j_s}} \sum_{n_s=n_{s_a}+j^{s_a}-j_i}
 \end{aligned}$$

GÜLDÜŞME

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik}=j_{ik}^{ik}} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n=n+l_k}^{n+l_k} \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{\binom{l}{j_s=j_{ik}+1}} \binom{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1}{j_{ik}=j_{sa}+1} \binom{l_i-l+1}{j_s=j_{sa}} \binom{n}{n_i=n+\mathbb{k}} \binom{n_i-j_s}{n_{is}=n-\mathbb{k}-j_s+1} \binom{n_{is}+j_s-j_{ik}-\mathbb{k}_1}{n_{ik}=n+\mathbb{k}_2-j_{ik}+1} \binom{n_{sa}+j_{sa}-j_i}{n_{sa}=n-j_{sa}+1} \binom{n_{sa}+j_{sa}-j_i}{n_s=n-j_i+1} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_{i_s}=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_{i_s})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n_{i_s}+j_s)} \sum_{k_1}$$

$$\sum_{(n_{sa}=n_{i_s}-j_{sa}-l)} \sum_{j_{sa}-j_i}$$

$$\frac{(n_{ik}-j_{ik}-j_s-l-k_2)!}{(n_i+j_{ik}-n-l-k_2-j_{sa})! \cdot (n_i+j_{sa}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq 0 \wedge l_i \leq D + s - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{i_s} \leq j_i + j_s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} - 1 = l_s \wedge l_{sa}^{ik} - j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_k > 0 \wedge$$

$$j_{sa}^{ik} = j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_k \wedge$$

$$l_{k_z}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}+1)!}{(j_{ik}-j_s+1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j^{sa}-j_{ik}+1)!(n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s+1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{(n_s=n_{sa}+j^{sa}-j_i)} \binom{(\quad)}{\quad}}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_{ik} \wedge l_i + j_s - s > l_s \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \binom{(\quad)}{\quad}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \binom{(\quad)}{\quad} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{l_s} \sum_{(j_s=j_{ik}-j_{sa}^k+1)}^{(j_s)} \\
& \sum_{k=j_{sa}^k+1}^{l_s+j_{sa}^k} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^k)}^{(j^{sa})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_i)} \\
& \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{(j_s)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned} & f_z = \sum_{i=2}^{(l_{sa}-l-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{n_i=n+k}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{n_{sa}=n-j^{sa}+1}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j^{sa}-j_i)} \\ & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \end{aligned}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_{sa}-l-j_{sa}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}^{ik}-j_s)} \sum_{(j_s=2)}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_s-j_{ik}-k_1)}$$

$$\sum_{(n_{sa}+j_{ik}-j_s)}^{(n_{sa}+j_{ik}-j_s)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{sa} + j_{sa} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_{sa} = D + s - l \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - k_1 + 1 = j_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_i \leq j_i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned}
 f_{zS} S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)} \\
 &\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_i-l+1)} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-l_k)} \\
 &\sum_{(n_{sa}=n+l_k+1)}^{(n_{ik}+j_{ik}-1)} \sum_{(n_s=n-j_i)}^{(n_{sa}-j^{sa}-j_i)} \\
 &\frac{(n_i-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!} \\
 &\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!} \\
 &\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 &\frac{(n_{sa}-n_s-1)!}{(j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 &\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 &\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 &\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
 &\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \\
 &\sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)} \\
 &\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} \Rightarrow 0$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = \mathbb{k}_1 + \mathbb{k}_2 \wedge$

$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_s - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()}$$

$$\sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa} = j_{sa} + 1)}^{(j_i + j_{sa} - s)} \sum_{j_i = l_i + n - D}^{l_{sa} + s - l - j_{sa} + 1}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l - s)!}$$

$$\frac{(l_i - l)!}{(n - l)! \cdot (n - j_i)!}$$

$$\sum_{l=1}^{\infty} \sum_{j_s=j_{ik}-j_{sa}+1}^{\infty}$$

$$\sum_{j_i=j_{sa}+1}^{\infty} \sum_{j_i=l_{sa}+s-l-j_{sa}+2}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(j_s)} \sum_{(j_s=j_s^{ik}+1)}^{(j_{sa})} \sum_{(j_{sa}=j_i+j_{sa})}^{(j_i+l_i+n-D)} \sum_{(j_i=l_i+n-D)}^{(j_i+l_i+n-D)} \sum_{(n_{ik}=n_{is}+j_s-j_{ik}-k_1)}^{(n_{ik}=n_{is}+j_s-j_{ik}-k_1)} \sum_{(n_{sa}=n_{ik}+j_s-j_{sa}-k_2)}^{(n_{sa}=n_{ik}+j_s-j_{sa}-k_2)} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(n_s=n_{sa}+j^{sa}-j_i)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa})! \cdot (n + j_{sa} - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{ik} + 1 \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_{ik}+s-l-j_{sa}^{ik}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMAYA

$$\begin{aligned}
& \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
& \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \\
& \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
& \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
& \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
\end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_i+n-D}^{l_{ik}+s-l-j_{sa}^{ik}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_i \wedge j_{sa} - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_s+s-l} \sum_{j_i=l_i+n-D}^{(n_i-j_s+1)} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s + n - n - 1)!}{(n_s + n - j_i)!} \cdot \\
& \frac{(n_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + n - l_{sa} - 1)!}{(j^{sa} + l_i - l_{sa} - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + n - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\cdot)} \\
& \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = j_{sa} + 1)}^{l_i - l + 1} \sum_{j_i = l_s + s - l + 1} \\
& \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} - l_{k_1}}^{n_{is} + j_s - j_{ik} - l_{k_1}} \\
& \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k_2})} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
\end{aligned}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (j_i)!}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}}^{(j_s - j^{sa} + 1)} \sum_{j_i=l_i+n-D}^{(l_s+s-l)}$$

$$\sum_{j_i=l_i+n-D}^{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_i+n-D}^{(n_i - j_i - 1)}$$

$$\sum_{j_i=l_i+n-D}^{(n_i - j_i - 1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{is}=n+l_{k_1}-j_s+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(n_s=n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{(j_s=j_{ik}, j_{sa}^{ik}+1)} \sum_{(l_i+l_{sa}-D-s-1)} \sum_{(j_i=l_i+n-D)} \sum_{(j_{ik}=j_{sa}+j_{sa}^{ik})} \sum_{(j_{sa}=j_{sa}+j_{sa}^{ik})} \sum_{(j_i=l_i+n-D)} \sum_{(j_{ik}=l_{ik}-\mathbb{k}_1)} \sum_{(n_i=n+l_{sa}+j_{sa}^{ik})} \sum_{(n_{is}=n+l_{sa}-j_{sa}^{ik})} \sum_{(n_{ik}=n+l_{sa}-j_{ik}+1)} \sum_{(n_{sa}+j_{sa}-j_{sa}^{ik}-\mathbb{k}_2)} \sum_{(n_{sa}+j_{sa}-j_i)} \sum_{(j_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\begin{aligned}
 & \sum_{k=l}^{\binom{)}{}} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(l_{sa}-l+1)} \sum_{(l_i-l+1)} (j^{sa}=l_i+n+j_{sa}-D-s) j_i=j^{sa}+s-j_{sa} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)} \sum_{(n_{is}+j_s-j_{ik}-l_k)} (n_{ik}=n_{is}-j_{ik}+1) \\
 & \sum_{(n_{ik}+j_{ik}-j_{sa}-j_i)} \sum_{(n_{sa}=n_{sa}^{lk}+1)} \sum_{(n_s=n-j_i)} \\
 & \frac{(n_i-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}-n_{ik}-j_s+1)!} \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j^{sa}-j_s-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\sum_{k=l}^{\binom{)}{}} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(l_{sa}-l+1)} \sum_{(j_i=j^{sa}+s-j_{sa})} (j^{sa}=l_i+n+j_{sa}-D-s)$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$

$D + s - n < l_i \leq D + l_s + j_i - n - 1$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^i, \mathbb{k}_2, j_{sa}^i, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik} j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_i+n+j_{sa}-D-s-1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
& \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot
\end{aligned}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^k+1)}^{()} \\
& \sum_{j_{ik}=j^{sa}+j_i-j_{sa}}^{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_s=l-j_{sa}^k+1)} \\
& \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{j_s, j_{ik}, j_i} &= \sum_{k=1}^{()} (j_s = j_{ik} - j_{sa}^{ik} + 1) \\ &\sum_{j_{ik}=j_s}^{n} \sum_{j_{sa}^{ik}=j_{sa}}^{l_i - j_s + 1} \sum_{j_i=j_{sa}+1}^{n+j_{sa}-s-1} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\ &\sum_{i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{l_i-j_s+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\ &\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ &\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

$$\begin{aligned}
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_s)} \\
& \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+l-1)} \sum_{(j_{sa}=l_i+n+j_{sa}-j_{sa})}^{(l_s+l-1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_s+l-1)} \\
& \sum_{n_i=n}^n \sum_{n_{is}=n+l_{ik}+1}^{n_i-j_s} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}-j_{ik}-l_{k1}} \\
& \sum_{(j_{ik}+j_{ik}-j_{sa}-l_{k2})}^{(j_{ik}+j_{ik}-j_{sa}-l_{k2})} \sum_{n_{sa}+j^{sa}-j_i}^{(j_{ik}+j_{ik}-j_{sa}-l_{k2})} \\
& \sum_{(j_{sa}=n-j^{sa}+1)}^{(j_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}^{(j_{sa}=n-j^{sa}+1)} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
\end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{ik}}^{()}$$

$$\sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-lk_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-lk_2) \cdot (n_{sa}+j_{sa}^{lk_2}) \cdot (j_s-s)!}{(n_{ik}+j_{ik}-n-lk_2)! \cdot (n_{sa}+j_{sa}^{lk_2})! \cdot (j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq n + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{ik} \leq j_{ik} \leq j_i + j_{sa} - s \wedge j_{sa}^{lk} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{lk} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_i \leq D - l_s + s - j_{sa}^{lk} - 1 \wedge$$

$$\geq n < n \wedge l = lk \Rightarrow$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s = j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, lk_1, lk_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s + lk \wedge$$

$$lk_z: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j_{sa}, j_i = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
& \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_i+n+j_{sa}^{lk}-D-s-1} \binom{(\quad)}{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
& \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
& \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_{sa}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
& \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
& \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
& \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
\end{aligned}$$

$$\sum_{k=l}^{\quad} \binom{(\quad)}{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\begin{aligned}
& \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_{sa}+j_{sa}^{lk}-l-j_{sa}+1} \binom{(\quad)}{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
\end{aligned}$$

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_s - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
& \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\quad)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\ \sum_{j_{ik} = j_{sa}^{ik} + 1}^{l + j_{sa}^{ik} - D - s - 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_i = l_i + n - D}^{l_i - l + 1} \\ \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\ \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\ \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\ \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l - s)!}$$

$$\frac{(l_i - l)!}{(j_i - n - l)! \cdot (n - j_i)!}$$

$$\sum_{l=1}^{j_s} \sum_{j_s=j_{ik}-j_{sa}+1}^{j_s}$$

$$\sum_{j_{ik}=n+j_{sa}^{l-1}}^{l-1} \sum_{j_{ik}+j_{sa}-j_{sa}^{l-1}}^{l-1} \sum_{j_i=j^{sa}+s-j_{sa}^{l-1}}^{l-1}$$

$$\sum_{n_i=n+l_1}^n \sum_{(n_{is}=n+l_1-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_{sa}+1)} \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_i)} \sum_{j_i=j^{sa}+s-j_{sa}} \sum_{n_i=n+k}^n \sum_{(j_s=j_{sa}+1)} \sum_{n_{ik}=n+k-j_{sa}^{ik}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \sum_{(n_{sa}=n_{ik}+j_{sa}-j^{sa}-k_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\quad)} \sum_{l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-2)! \cdot (n_{ik}+j_s-n_{sa}-j_s+1)!} \cdot \frac{(n_{ik}-n_{ik}-1)!}{(j_{ik}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_s + j_{sa}^{lk} - l} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_i}^{n_{is} + j_s - j_{ik} - l_{k_1}} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k_2})} \sum_{(n - j_i + 1)}^{n_{sa} + j^{sa} - l_{k_2}} \\
 & \frac{(n_i - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{sa} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}$$

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_s + j_{sa}^{lk} - l} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i \wedge l_i + j_{sa} - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^i + 1 \wedge j_{sa}^s = j_{sa} - 1 \wedge$$

$$s: (j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i)$$

$$s \geq 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s + n - n - 1)!}{(n_s + n - j_i)!} \cdot \\
& \frac{(n - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + n - l_{sa})!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + n - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=1}^{(l_{sa} - l - j_{sa} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
& \sum_{j_{ik} = j_s + j_{sa}^{lk} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
& \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_{k1}} \\
& \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k2})} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
\end{aligned}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{i=0}^{(l_{sa}-l-j_{sa}+s)} \sum_{k=0}^{(D-s+1)} \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(j_{ik}+j_{sa}-j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_i-j_{sa}-1)} \sum_{j_s=n+l_k}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{ik}+j_{ik}-j_s-s-l_{k_2})!} \cdot \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < l \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{n-D-s} \sum_{i=2}^{n-D-s} \sum_{j_{ik}=j_s+j_{sa}^{ik}}^{n-j_s+j_{sa}^{ik}} \sum_{j_i=l_i+n-D}^{n-j_s+j_{sa}^{ik}} \sum_{n_i=n+j_{sa}^{ik}-1}^{n-j_s+j_{sa}^{ik}} \sum_{n_{is}=n+\mathbb{k}_1-1}^{n-j_s+j_{sa}^{ik}} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n-j_s+j_{sa}^{ik}-\mathbb{k}_2} \sum_{n_{sa}=n-j_{sa}+1}^{n-j_s+j_{sa}^{ik}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n-j_s+j_{sa}^{ik}-\mathbb{k}_2} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\begin{aligned}
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}^{(l_i-l+1)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \sum_{(n_{sa}=n+l_k-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}+1)} \sum_{(n_s=n-l_k)}^{n_{sa}-j_{sa}-j_i} \\
 & \frac{(n_i-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!} \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j_{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}^{(l_i-l+1)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_i \wedge$

$D + s - n < l_i \leq D + l_s + j_{sa} - n - 1$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^i, \mathbb{k}_2, j_{sa}, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_s - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot
\end{aligned}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)} \\
& \sum_{j_{ik} + j_{sa}^{lk} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})}^{()} \sum_{j_i = j^{sa} + s - j_{sa}}^{()} \\
& \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{\dots} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{\dots} \sum_{j_i=l_i+n-D}^{\dots} \sum_{j_{sa}=n-j^{sa}+1}^{\dots} \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{\dots} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{\dots} \sum_{n_{sa}=n-j^{sa}+1}^{\dots} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{j_s - j_{ik} - j_{sa} - 1} \frac{1}{(j_s - j_{ik} - j_{sa} - k)!} \cdot \\
& \sum_{j_{ik}=j^{sa} - k - j_{sa}}^{j_s - k - j_{sa} - 1} \frac{1}{(j_s - j_{ik} - j_{sa} - k)!} \cdot \\
& \sum_{n_{ik}=n_{is} + j_s - j_{ik} - k_1}^{n_{is} + j_s - 1} \frac{1}{(n_{is} + j_s - j_{ik} - k_1)!} \cdot \\
& \sum_{n_{sa}=n_{ik} + j_{ik} - j^{sa} - k_2}^{n_{sa} + j^{sa} - j_i} \frac{1}{(n_{sa} + j^{sa} - j_i)!} \cdot \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D > n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{(j_s=j_{ik}, j_{sa}^{ik}+1)} \sum_{(l_{ik}+l-j_{sa}^{ik}+1)} \sum_{(j_{ik}=j_{sa}+j_{sa}^{ik}, j_i=l_i+n-D)} \sum_{(n_i=n+\mathbb{k}_1, n_{is}=n+\mathbb{k}_1-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)} \sum_{(n_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜZMAYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_i+n-l-j_{sa}^{ik}+1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k_1}-j_s-s)!}{(l_s-l-1)! \cdot (l_k-j_s-l_{k_1}+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_s - 1 \wedge$$

$$1 \leq j_{ik} \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_s \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} = j^{sa} \leq j_i + j_{sa} - s = j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} = j_{sa}^{ik} + 1 = l_s \wedge l_{ik} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n \leq l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = 0 \wedge$$

$$j_{sa} \leq j_{sa}^i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$\{j_s^s, l_{k_1}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_k \wedge$$

$$l_{k_2}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$fzS_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_i+n}^{(\quad)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-1)! \cdot (n_{sa}^{sa}-j_i)!}{(n_{sa}^{sa}+1)! \cdot (n_s-n_j)!}$$

$$\frac{(n_i-n_{ik}-1)!}{(j_s-2)! \cdot (n_i+n_{ik}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j_{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_{sa}^{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+j_{sa}^{lk}-j_{sa}}^{(\quad)} \sum_{(j_{sa}^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq i - 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{sa} \leq j_{sa}^{ik} + j_{sa} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + j_{sa} - j_{sa} \leq j_i \leq j_{sa} \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa} - j_{sa} = l_{ik} - l_i + j_{sa} - j_{sa} \wedge$

$D + s - n < l_i \leq D + l_s + s - n - 1$

$D \geq n < n \wedge l = i \Rightarrow s \geq 0 \wedge$

$j_s \leq j_{sa}^l - j_{sa}^{ik} = j_{sa}^l - 1 \wedge j_{sa}^s = j_{sa}^l - 1 \wedge$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^l\}$

$s \geq 4 \wedge l_s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_i - j^{s_a} - 1)! \cdot (n_{s_a} + j_i - j_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} - l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{j_s=j_{i_k}-j_{s_a}^{i_k}+1}^{()}$$

$$\sum_{j_{i_k}=l_i+n+j_{s_a}^{i_k}-D-s}^{l_{s_a}+j_{s_a}^{i_k}-l-j_{s_a}+1} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{()}$$

$$\sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{(n_{s_a}=n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})}^{()}$$

$$\sum_{n_s=n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - j_{sa}^{ik} = l_s$$

$$D + s - n < l_i \leq D + l_s + s - n - l_i$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{sa}-l-j_{sa}+2)} \sum_{(j_s=2)}^{(j_s-1)} \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_s-1)} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(j_{sa}-j_{sa}^{ik})} \sum_{j_i=l_i+n-D}^{(l_i-l+1)} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{sa} - l - j_{sa} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
 & \sum_{j_{ik} + j_{sa}^{lk} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{\substack{f z \rightarrow j_{sa}^{ik}, j_{sa}^s, j_i \\ l \neq l}} \sum_{(l_{ik} - j_{sa}^{ik} + 2)} \sum_{(j_s=2)} \sum_{(j_{ik}=j_s+j_{sa}^i-1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_i=l_i+n-D)} \sum_{(n_i=n+\mathbb{k})} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)} \sum_{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{(n_{sa}=n-j^{sa}+1)} \sum_{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik}=j_s}^{l_{ik}-l-1} \sum_{j_{sa}=j_{sa}-j_{sa}^{ik}}^{j_{sa}-j_{sa}^{ik}} \sum_{j_{ik}=j_s}^{l_{ik}-l-1} \sum_{j_{sa}=j_{sa}-j_{sa}^{ik}}^{j_{sa}-j_{sa}^{ik}} \sum_{n+l_k}^n \sum_{n_{is}=n+l_k}^{j_s+1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{j_s+1} \sum_{n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k2}}^{j_s+1} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{j_s+1} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_i - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l \wedge$$

$$l_{k_z}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}}^{(\quad)} \sum_{j_i=1}^{l_{ik}-l-s+1}$$

$$\sum_{n_i=n+1}^n \sum_{(n_i-j_s)}^{(n_i-j_s)} \sum_{n_{is}+j_s-j_{ik}}^{n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{sa}^{sa}+1)}^{n_{sa}+j_{ik}-j_{sa}^{ik}-j_{sa}} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{ik}-j_{sa}^{ik}-j_{sa}}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^i)!}$$

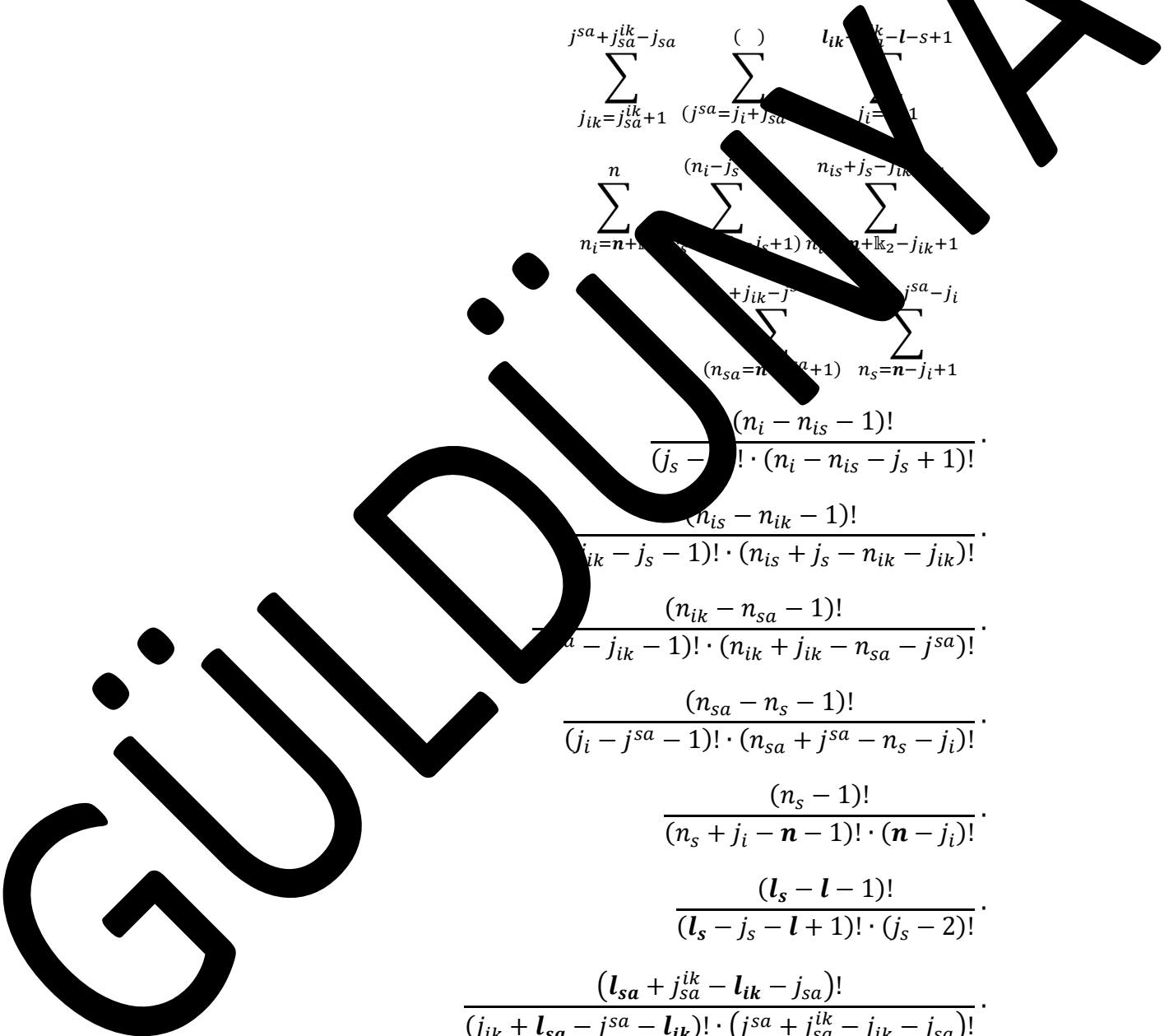
$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^i - l_{ik})! \cdot (j_{sa}^i + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$



$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_{ik}+j_{sa}^{lk}-l-s}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \frac{(n_{ik}+j_{ik}-l_{ik})! \cdot (n_{sa}+j_{sa}-j_i)!}{(n_{sa}=n_{sa}^{lk}+1)! \cdot (n_s=n-j_i)!} \\
 & \frac{(n_i-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}-n_{ik}-j_s+1)!} \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(n_{sa}-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=s+1}^{l_{ik}+j_{sa}^{lk}-l-s+1}
 \end{aligned}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i \geq l_{ik} \wedge l_{sa} + j_{sa} - s = l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} \Rightarrow 0$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = \mathbb{k}_1 + \mathbb{k}_2 \wedge$

$\mathbb{k}_2: 2 = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=s+1}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
& \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_i)!} \cdot \\
& \frac{(n_s-1)!}{(n_{is}+j_s-1)! \cdot (n-j_i)!} \cdot \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
& \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{lk}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
& \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
& \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_s+j_{sa}^{lk}-l} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot
\end{aligned}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j^{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_s - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l)!}{(D + j_i - n - l)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\cdot)} \\
& \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(\cdot)} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{(\cdot)} \sum_{j_i = s+1}^{l_s + s - l} \\
& \sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_{is} = n + \mathbb{k}_1 - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(\cdot)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z^{(s)} = \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_s-j_{sa}^{ik}} \sum_{j_i=j_{sa}+s-j_{sa}}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{n_i=n+k}^{(n_{is}+k-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-k_1)} \frac{\sum_{n_{sa}=n-j_{sa}+1}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j^{sa}-j_i)} (n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j_{sa}=l_{ik}+j_{ik}^{k-1}-s+2)}^{(l_{sa}-l+1)} \sum_{(j_{sa}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_i=n+l_k)}^n \sum_{(n_i=n+l_k-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=l_{k2}-j_{ik}+1)}^{(n_{is}+j_s-j_{ik})} \sum_{(n_{ik}-j_{sa}-l_{k2})}^{(j_{sa}-j_i)} \sum_{(n_{sa}=n-j_i+1)}^{(n_{sa}-j_i+1)} \sum_{n_s=n-j_i+1}^{(n_i-n_{is}-1)!} \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \frac{(n_{is} - n_{ik} - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^a+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{(j_{sa}=j_{sa}^a+1)}^{()} \sum_{j_i=j_{sa}^a+s}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^a)}^{()} \sum_{n_s=n_{sa}+j_{sa}^a}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-s)! \cdot (n_{is}-j_{ik}+s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-s)! \cdot (n_{is}-j_{ik}+s)!} \cdot \frac{(l_{ik}-l-1)!}{(l_{ik}-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq l < n \wedge l = l_{k_1} + l_{k_2} \neq 0 \wedge$$

$$j_{sa} \leq j_{sa}^a - 1 \wedge j_{sa}^{ik} = j_{sa}^a - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, j_{sa}^{ik}, l_{k_2}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = l_{k_1} + l_{k_2} \wedge$$

$$l_{k_2} = l_{k_1} \wedge l_{k_1} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDENWA

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
& \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{i,j_i} &= \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\ &\sum_{j_{ik}=j_{sa}^{ik}+1}^{(k-l+1)} \sum_{(l_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\ &\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\ &\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \end{aligned}$$

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-1} \sum_{j_{ik}=j_{sa}^{lk}+1}^{j_{sa}^{lk}+j_{sa}-j_{sa}^{lk}} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_s - j_{sa}^{lk} - 1)} \\
& \sum_{n+l_k}^{(n_{is}-1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2}}^{(n_{sa}=n_{sa}+j^{sa}-j_i)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$j_s \geq n - l \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{j_s=j_{ik}}^{()} \sum_{j_{sa}=j_{sa}^{ik}+1}^{()} \sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{j_{ik}+j_{sa}-j_{sa}^{ik}}^{(l_{sa}+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{()} \sum_{n_i=n+\mathbb{k}_1}^{n-j_s+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}}^{n_{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j_{sa}+1}^{n_{sa}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{(\)} \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s}^{(\)} \sum_{(n_{sa}=n_{ik}-j_{sa}^{ik}-j_s)}^{(\)} \sum_{j_{sa}=j_i}^{(\)} \frac{(n_{ik}-j_{ik}-j_s-j_s-l_k_2)!}{(n_i+j_{ik}-n-l_k_2-j_{sa}^s)! \cdot (n_i+j_{sa}-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq 0 \wedge l_i \leq D + s - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_i + j_{sa} \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa}^{ik} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_k > 0 \wedge$$

$$j_{sa}^{ik} = j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_k \wedge$$

$$l_{k_z}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}^{(\)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{(l_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k1}}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}+1)!}{(j_{ik}-j_s+1) \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)}{(j^{sa}-j_{ik}+1)! \cdot (n_{is}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s+1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_s - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{(j_s)} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2)}^{(j_s)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{j_s, j_{ik}, j_i} &= \sum_{k=1}^{()} (j_s = j_{ik} - j_{sa}^{ik} + 1) \\ &\sum_{j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} (j_s) \sum_{j_i+j_{sa}-s} () l_{ik+s-l-j_{sa}^{ik}+1} \\ &\sum_{i=n+\mathbb{k}}^n (n_i-j_s+1) \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\ &\sum_{n_{sa}=n-j_{sa}+1}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ &\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \end{aligned}$$

$$\begin{aligned}
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{()} \sum_{j_s=j_{ik}^{ik}+1}^{()} \\
& \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{j_{ik}=l_i+j_{sa}-s}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{()} \\
& \sum_{n_i=n+l_{ik}-j_{ik}+1}^n \sum_{n_{is}=n+l_{ik}-j_{ik}+1}^{j_s-1} \sum_{n_{ik}=n+l_{ik}-j_{ik}+1}^{j_{ik}-l_{k_1}} \\
& \sum_{n_{sa}=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-l_{k_2}} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
\end{aligned}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-l-j_{sa}^{ik}+1}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(n_{ik}-j_s+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_s)!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D) j_i-n-l_i! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq n + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_i - n < l_i \leq D - l_s + s - l - 1 \wedge$$

$$\geq n < l_i \wedge I = \mathbb{k} \Rightarrow \mathbb{k} \wedge$$

$$j_{sa} \leq j_i - 1 \wedge j_{sa}^{ik} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, \dots, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$\geq 4 \wedge s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}^i, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDENWA

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
& \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(\quad)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
& \sum_{n_i=n+\mathbb{k}_1}^n \sum_{(n_{is}=n+\mathbb{k}_1-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa} = l_i + n + j_{sa} - D - s)}^{(l_{ik} + j_{sa} - l - j_{sa}^{ik} + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - l_{sa})!}$$

$$\frac{(l_i - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_s=1}^{l_i} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_i}$$

$$\sum_{j_s=1}^{l_i+1} \sum_{j_s=j_{sa}^{ik}+1}^{(l_i+j_s-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_{sa}-l-j_{sa}^{lk}+2)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k-1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k-2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{()} \sum_{j_s=j_{ik}^{ik}+1}^{()} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}^{ik}+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_{ik}+1)} \sum_{n_i=n+l_k}^{(n+l_k-j_s+l_{ik})} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{ik}+j_{ik}-j_s-s-l_{k_2})!} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_s - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_s-j_{sa}^{ik}+1}^{(n_i-j_s+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_{is}+j_s-j_{sa}^{ik}-\mathbb{k}_1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{ik}+j_s-j_{sa}^{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDÜZMÜŞA

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=l_s+j_{sa}-l-s+1)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDENWA

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{(n_s=n_{sa}+j^{sa}-j_i)} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}}{1}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^i + 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{l_i} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_i+1} \sum_{(l_i+j_{sa}-l-s+1)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k2}) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik} = n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{j_i = j^{sa} + s - j_{sa}}^{j_{sa}^{lk} + j_{sa} - j_{sa}^{lk}} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_i - 1)} \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{(n_{is} = n + l_{k_2} - j_s + 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$j_i \geq n - l_i \wedge l_i \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{j_s} \sum_{(j_s=j_{ik}+1)}^{(j_s=j_{sa}+1)} \sum_{j_{ik}=j_{sa}^{ik}}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j_{sa}=n+j_{sa}-D)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_{sa}^s=j_{sa}}^{(n-j_s)} \sum_{n_i=n+\mathbb{k}}^{(n_i-j_s)} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}+j_s-j_{ik}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{sa}-j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_{i_s}=j^{sa}+s-j_{sa}}^{(\quad)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k}^{n_{i_s}+j_s-l_k-k_1} \sum_{(\quad)}^{(\quad)} \\
 & \frac{(n_{i_k}+j_{i_k}-l_k-k_2) \cdot n_{sa}+j^{sa}-j_{i_s}}{(j^{sa}-j_{i_s}-1)! \cdot (n_{i_s}-n_{i_s}-1)!} \cdot \\
 & \frac{(n_{i_s}-n_{i_k}-1)!}{(j^{sa}-j_s-1)! \cdot (n_{i_s}+j_s-n_{i_k}-j_{i_k})!} \cdot \\
 & \frac{(n_{i_k}-n_{sa}-1)!}{(j^{sa}-j_{i_k}-1)! \cdot (n_{i_k}+j_{i_k}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{i_k}-j_{sa})!}{(j_{i_k}+l_{sa}-j^{sa}-l_{i_k})! \cdot (j^{sa}+j_{sa}^{ik}-j_{i_k}-j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} - \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n_s=l_{k_2}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^{ik})! \cdot (n + j_{sa}^{ik} - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - s)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - j_{sa}^{ik} \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} - j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_i \leq l_s + s - n = D - n + 1$

$D > n < n \wedge l = l \wedge l_s \geq l_s$

$j_{sa}^{ik} - j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa}^{ik} - 1 = j_{sa}^{ik} - 1 \wedge$

$\{j_{sa}^{ik}, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s \geq 4 \wedge s = s - l_s + 1$

$l_{k_2} - l_{k_1} = l_{k_2} - l_{k_1} = l_{k_2} - l_{k_1} \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}^{ik}=l_i+n+j_{sa}^{ik}-D-s)}^{(l_i+j_{sa}^{ik}-l-s+1)} \sum_{j_i=j_{sa}^{ik}+s-j_{sa}^{ik}}$$

$$\begin{aligned}
& \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
& \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
& \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
& \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
& \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
& \frac{(n_{s_a} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{s_a} + j^{s_a} - j_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})! \cdot (j^{s_a} - l_{i_k})! \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_{i_k} - l - j_{s_a}^{i_k} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
& \sum_{j_{i_k} = j_s + j_{s_a}^{i_k} - 1}^{(l_i + j_{s_a} - l - s + 1)} \sum_{(j^{s_a} = j_{i_k} + j_{s_a} - j_{s_a}^{i_k})} \sum_{j_i = j^{s_a} + s - j_{s_a}} \\
& \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
& \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}
\end{aligned}$$

$$\begin{aligned}
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s + j_i - n - 1)!}{(n_s - j_i - 1)!} \cdot \\
& \frac{(l_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(l_{ik} - l - j_{sa}^{ik} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
& \sum_{j_{ik} = j_s + j_{sa}^{lk} - 1}^{(\quad)} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(\quad)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
& \sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_{is} = n + \mathbb{k}_1 - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(\quad)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} j_{sa}^{ik} &= \sum_{k=l}^{(n_i - l - D - s)} \sum_{(j_s=2)} \\ &= \sum_{(l_i + j_{sa} - l - s + 1)}^{(n_i + j_{sa} - D - s)} \sum_{j_i = j^{sa} + s - j_{sa}} \\ &= \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\ &= \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\ &= \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ &= \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\ &= \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &= \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ &= \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=1}^{(l_s - l + 1)} \sum_{j_s = l_i + n - l - s + 1}^{(l_s - l + 1)} \sum_{j_{ik} = j_s + j_{sa}^{ik}}^{(l_i + j_s - l - s + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(l_i + j_s - l - s + 1)} \sum_{n_i = n - j_s + 1}^n \sum_{n_{is} = n + k_1 - 1}^{n - j_s + 1} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n - j_s + 1} \sum_{a = n - j^{sa} + 1}^{n - j_s + 1} \sum_{n_s = n - j_i + 1}^{n - j_s + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-k_2)}^{()} \sum_{n_s=n_{sa}+j_s}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa})!}{(n_{ik}-j_{ik}-n-k_2-j_{sa})! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \wedge (D-n+1) \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_i < j_i + j_{sa} - s \wedge j^{sa} + j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} \wedge l_{sa} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D - j_i - n < l_{sa} \leq D + l_s + j_s - n - 1 \wedge$$

$$D \geq n < n \wedge I = k \Rightarrow$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{ik}+s-l-j_{sa}^{ik}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}^{l_{k_1}}}^{n_{is}+j_s-j_{ik}^{l_{k_1}}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2}^{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}^{l_{k_1}}}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{ik}+s-l-j_{sa}^{lk}+1} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - l_{sa})!}$$

$$\frac{(l_s - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_s=1}^{l_s} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_s}$$

$$\sum_{j_{ik}=j_s}^{l_s+j_{sa}^{ik}-l} \sum_{j_i=j_i+j_{sa}-s}^{l_s} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_{ik}=j_{sa}^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{i+j_{sa}-s}^{l_s} \sum_{n+s-D-j_{sa}}^{l_s}$$

$$\sum_{n_i=n+l_{k_1}} \sum_{n+l_{k_2}-j_s} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{n_{sa}=n_{ik}+j_s-j_{sa}-l_{k_2}} \sum_{n_s=n_{sa}+j_{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa})! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_{ik} \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_{k_2} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} (l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)$$

$$\sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=n-l-j_s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}^{(n_{ik}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_i-n_{ik}-1)!}{(j_{ik}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{ik}+j_{sa}-l-j_{sa}^{ik}+2)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s+1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDENWA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = j_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - l - 1)! \cdot (j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D + l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{\binom{D}{j_s - j_{ik} - j_{sa} + 1}} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_s + j_{sa} - l} \sum_{j^{sa} = l_s + j_{sa} - l + 1}^{(l_{sa} - l + 1)} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_s = j_{sa} + j_{sa}^{ik} - j_{sa}}^{(n_s - 1)} \sum_{j_{ik} = l_{sa} + n - D}^{(l_s - j_s - l)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(n_i - 1)} \\
& \sum_{n + l_k}^{(n_i - 1)} \sum_{n_{is} = n + l_k - j_s + 1}^{(n_i - 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_i - 1)} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{(n_s - 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(n_s - 1)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$j_s \geq n - 1 \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{j_s=j_{ik}}^{()} \sum_{j_{sa}=j_{sa}^{ik}+1}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{j_{sa}=l_{sa}+n-j_{sa}+1}^{(l+1)} \sum_{j_{ik}=j_{sa}+s-j_{sa}}^{(j_s+1)} \sum_{n_i=n+\mathbb{k}_1}^{n} \sum_{n_{is}=n+\mathbb{k}_2-j_{sa}+1}^{n-j_{sa}+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{ik}-\mathbb{k}_1} \sum_{j_{sa}=n-j_{sa}+1}^{(j_{sa}+j_{ik}-j_{sa}^{ik}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k+1}^{n_{is}+j_{ik}-l_{k1}} \\
 & \sum_{n_{sa}=n-j_{sa}^{ik}}^{(n_{ik}+j_{ik}-n_{k2})} \sum_{n-j_i+1}^{n_{sa}+j_{sa}^{ik}} \\
 & \frac{(n_{is}-n_{ik}-1)!}{(n_{is}-2)! \cdot (n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(n_{is}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{ik}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} - \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - \dots)!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^{ik})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)! \cdot (n - j_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j_{sa}^{ik} + j_{sa} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} > l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$

$D + j_s - n < l_{sa} \wedge D + l_s + j_{sa} - \dots - 1$

$D > n < n \wedge l_{k_2} = l_k > \dots \wedge$

$j_{sa}^{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - j_{sa}^{ik} - 1 = j_{sa}^{ik} - 1 \wedge$

$s \in \{j_{sa}^{ik}, l_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s \geq 4 \wedge s = j_{sa}^{ik} \wedge$

$l_{k_2} = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\begin{aligned}
& \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
& \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
& \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
& \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
& \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
& \frac{(n_{s_a} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(j^{s_a} + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})! \cdot j^{s_a} - l_{i_k})! \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
\end{aligned}$$

$$\sum_{k=l}^{\binom{)}{}} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}$$

$$\sum_{j_{i_k}=l_{s_a}+n+j_{s_a}^{i_k}-D-j_{s_a}}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{(l_{s_a}-l+1)} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\begin{aligned}
& \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
& \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}
\end{aligned}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_i=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+l-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{()} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENWA

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{(j_s=2)}^{(l_{sa}+D-j_{sa})} \sum_{(j_{ik}=j_s+j_{sa}-1)}^{(j_{sa}=l_{sa}+n-D)} \sum_{(j_i=j_{sa}+s-j_{sa})}^{(j_{sa}-l+1)} f(z) \cdot \dots$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l_{sa}+n-j_{sa}^{ik}+1}^{(l_{ik}-j_{sa}^{ik}+2)} \frac{(l_{ik}-j_{sa}^{ik}+2)!}{(l_{ik}-j_{sa}^{ik}+1)!} \cdot \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}}^{(l_s-l+1)} \sum_{j_{sa}=j_{ik}+j_{sa}-j_s}^{(l_s-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_s-l+1)} \cdot \\
 & \sum_{n_i=n+j_s-j_{sa}^{lk}+1}^n \sum_{n_{is}=n+l_k-j_{sa}^{lk}+1}^{(n-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{(n-j_s+1)} \cdot \\
 & \sum_{n_{sa}=n-j^{sa}+1}^{(n-j_s+1)} \sum_{n_s=n-j_i+1}^{(n-j_s+1)} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_{ik}-l-j_{sa}^{ik}+2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{()} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(n_i-j_s+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{lk})! \cdot (j_s-s-l_{k1})!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{lk})! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l_{k1}+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq n - a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{ik} \leq j_i + j_{sa} - s \wedge j_{sa}^{lk} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 = l_{sa} + j_{sa}^{lk} - j_{sa}^{ik} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$\geq n < l_{sa} \wedge l = l_k \Rightarrow$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s = j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k1}, l_{k2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$j_{sa}^s > 4 \wedge j_{sa}^s + l_k \wedge$$

$$l_{kz}: z = 2 \wedge l_k = l_{k1} + l_{k2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}^{(l_{sa}+n-D-j_{sa})}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(l_{sa}-l+1)}^{(j_{sa}=l_{sa}+n-D)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i=n+l_k-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n=n-j_i+1}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s) \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{is}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1) \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(l_s-l-1)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_s-l-1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(l_{sa}-l+1)}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i=n+l_k-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(l_s-l-1)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_s-l-1)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{lk} - j_{sa} - l_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{j_s = j_{ik} - j_{sa}^{ik} + 1} \sum_{j_i = l_i + n - D}^{j_i = l_i + n - D} \binom{l_{ik} + s - l - j_{sa}^{ik} + 1}{j_i = l_i + n - D} \\
& \sum_{j_s = j^{sa} + j_{sa}}^{j_s = j^{sa} + j_{sa}} \sum_{j_i = j_i + j_{sa} - s}^{j_i = j_i + j_{sa} - s} \sum_{j_i = l_i + n - D}^{j_i = l_i + n - D} \binom{l_{ik} + s - l - j_{sa}^{ik} + 1}{j_i = l_i + n - D} \\
& \sum_{j_i = n + l_k}^{j_i = n + l_k} \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_{is} = n + l_k - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}} \binom{n_i - j_s + 1}{n_{is} = n + l_k - j_s + 1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{n_s = n_{sa} + j^{sa} - j_i} \binom{l_{ik} + s - l - j_{sa}^{ik} + 1}{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^s = \sum_{i=1}^{(j_{sa}^{ik} - j_{sa}^{ik} + 1)} \sum_{l=1}^{(j_{sa}^{ik} - l)} \sum_{j_{ik}=j_{sa}^{ik} - (j_{sa} - j_{sa} - s)}^{(j_{sa} - j_{sa} - s)} j_i = l_i + n - D$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_{is}+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\frac{(n_{ik} + j_{ik} - j^{sa} - k_2) n_{sa} + j^{sa} - j_i}{(n_{sa} = n - j^{sa} + 1) n_s = n - j_i + 1}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1, \dots)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(\)} \sum_{(j_{sa}=j_i+j_{sa}^{ik}, \dots)}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i=n+k, \dots)}$$

$$\sum_{(n_{sa}=n_{ik}-j_{sa}^{ik}, \dots)}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_s + s - n - 1 < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_i-j_s+1)} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_{is}+j_s-n-\mathbb{k}_1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_s+1}^{(n_{ik}+j_{ik}-j_s-n-\mathbb{k}_2)} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)} \sum_{(j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})}^{(j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})} \sum_{(j_i-j^{sa}+1)}^{(j_i-j^{sa}+1)} \frac{(n_{is} - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_i - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDENYA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{ik}+j^{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-s)!}{(n_{ik}+j_{ik}-n-k_2-j_{sa}^{ik}+1) \cdot (n+j_{sa}-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-n-l_i)!}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_{ik} - j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge j_{sa}^{ik} + j_{sa} - j_{sa}^{ik} = l_i \wedge l + j_{sa} - s = l_{sa} \wedge$$

$$D - s - n < l \leq D + l_s - s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k_2 = 0 \wedge$$

$$l_s \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, j_{sa}^i, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2, k = k_1 + k_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa}-n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_{ik}-n_{is}+n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - j_{sa}^s$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq j_{sa} + j_{sa}^{ik} - j_{sa}^s$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^s > l_i \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_i+j_{sa}-l-s+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
& \frac{(n_i-n_{is}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{is}-j^{sa})!} \cdot \\
& \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_{ik})!} \cdot \\
& \frac{(n_s-1)!}{(n_{is}+j_{ik}-1)! \cdot (n-j_i)!} \cdot \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
& \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+l_{sa}-j_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
& \sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(\cdot)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_i^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2$$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - j_{sa}^{lk})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik} = n + l_k}^n \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{l_{ik} + s - l - j_{sa}^{lk} + 1} \sum_{j_i = l_{sa} + n + s - D - j_{sa}}^{(n_i - j_s + 1)} \\
& \sum_{n_{is} = n + l_k - j_s + 1}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_i - j_s + 1)} \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{(n_i - j_s + 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(n_i - j_s + 1)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^{\dots} = \sum_{i_{ik}=j_{sa}^{ik}+1}^{n} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{(j_s-2)} \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{(n_{is}+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{sa}+j_{sa}-j_i)} \sum_{n_s=n-j_i+1}^{(n_s-1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(\)} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=1}^{l_s-l} \sum_{j_s=j_{ik}-l_{k_1}}^{l_s-l} \sum_{n_i=n+l_{k_2}}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+l_{k_2}-j_s-j_{ik}-l_{k_1})} \sum_{(n_{sa}=n+l_{k_2}-j_{ik}-j_{sa}-j_i)} \frac{(n_{ik} + j_{ik} - s - l_{k_2})!}{(n_{ik} + j_{ik} - l_{k_2} - j_i)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = 1 \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s - s - n - l_i + 1 \leq l_s \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_s - s - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l_i = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-j_s-j_{sa}}^{(n-j_s+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s-1)}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa})! \cdot (n_{sa}+j^{sa}-j_i)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZYA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_k)}^{()} \sum_{n_s=n_{ik}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - l_k - j_{sa} - s)! \cdot (n + j_{sa} - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_{ik} - j^{sa} + j_{sa} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge j_{sa}^{ik} + j_{sa} - j_{sa}^{ik} - l_i + j_{sa} - s = l_{sa} \wedge$

$D - j_{sa} - n \leq l_s \leq D - n + j_{sa} - s - 1 \wedge$

$D \geq n < n \wedge l = l_k = 0 \wedge$

$l_s \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, l_k, j_{sa}^{ik}, j_{sa}^i, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s \leq s + l_k \wedge$

$l_k: z = 2 \wedge l_k = l_{k1} + l_{k2} \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_s+j_{sa}^{lk}-l} \sum_{(j_{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} -
 \end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(j_{sa}=l_{sa}+n-D)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDÜZMAYA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_s - j_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - l_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq l_{sa}$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_i + j_{sa} - s \wedge l_{sa} \wedge$

$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1$

$D \geq n < n \wedge l = \mathbb{k} \geq 0$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = \dots + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
& \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_i)!} \cdot \\
& \frac{(n_s-1)!}{(n_{is}+j_s-1)! \cdot (n-j_i)!} \cdot \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
& \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{lk}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
& \sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(\quad)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(\quad)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!}
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{\substack{j_{ik}, j_{sa}, j_i \\ k=l}}^s \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=s+1}^{l_s+s-l} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_{sa}^{ik} + 1)!}$$

$$\frac{(l_i - l + 1)!}{(D + j_i - n - l_i)! \cdot (j_i - l)!}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}^{sa}=j_i+j_{sa}-s} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \sum_{j_s=2}^{l_s-l+1} \dots$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_{is}+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \dots$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

GÜLDÜZMAYA

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa} + j_{sa}^{ik} - j_i}^{(\)} \sum_{(j_{sa} = j_i - s + 1)}^{(\)} \sum_{l_s + s - l}$$

$$\sum_{n_i = n + k}^n \sum_{(n_i = n + k)}^{(n_i - j_s + 1)} \sum_{(n_i = j_s - j_{ik} - k_1)}$$

$$\sum_{(n_{sa} = j_{ik} - j_{sa}^{ik} - j_i)} \sum_{n_s = n_{sa} + j_{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - j_i)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_s = l \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{ik} + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned}
 f_{z^S}^{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \\
 &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 &\sum_{(n_{sa}=n_{sa}^{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-j_i)} \sum_{n_s=n-j_i}^{(n_{sa}-j_{sa}-j_i)} \\
 &\frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{is} - n_{ik} - j_s + 1)!} \cdot \\
 &\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!} \cdot \\
 &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 &\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 &\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 &\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 &\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 &\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)} \\
 &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{ik}+j_{ik}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{i_s} - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{s_a} - 1)!}{(j^{s_a} - j_{ik} - 1)! \cdot (n_{ik} - n_{s_a} - j^{s_a} + 1)!}$$

$$\frac{(n_{s_a} - 1)!}{(j^{s_a} - j_{ik} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{s_a}^{ik} + 1)!}{(j_s - j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{s_a}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{s_a}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j^{s_a}+j_{s_a}^{ik}-j_{s_a}}^{(l_s+j_{s_a}-l)} \sum_{(j^{s_a}=j_{s_a}+1)}^{(j_{s_a}+j_{s_a}-l)} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{s_a}=n_{ik}+j_{ik}-j^{s_a}-l_{k_2})}^{()} \sum_{n_s=n_{s_a}+j^{s_a}-j_i}$$

GÜLDÜSÜZ

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s + j_{sa}^{ik} - l} \sum_{(j_s)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - j^{sa} + 1)!} \cdot \\
 & \frac{(n - l_i)!}{(n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{-l+1} \sum_{(j_s=2)}^{-l+1} \\
 & \sum_{(j_s=2)}^{-l+1} \sum_{(j_s=2)}^{-l+1} \sum_{(j_s=2)}^{-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{j_s=j_{ik}^{(k)}+1}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{j_{ik}+j_{sa}-j_s}^{()} \sum_{j_i=j_{sa}+s-j_{sa}}^{()}$$

$$\sum_{n_i=n+l_k}^{()} \sum_{n+l_k-j_s}^{()} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{()}$$

$$\sum_{n_{sa}=n_{il}^{(k)}-j_{sa}-l_{k2}}^{()} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{()} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - j_s - s - l_{k2})! \cdot (n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\geq n < n \wedge l \neq i \wedge l \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_{sa} - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k1}, j_{sa}^{ik}, l_{k2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_k \wedge$$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz \mathcal{S}_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_s}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_i-j^{sa}-\mathbb{k}_2)}^{n_{is}+j_{ik}-\mathbb{k}_1} \sum_{(n_s=n-j_i+1)}^{n+\mathbb{k}-j_{ik}+1}$$

$$\frac{(n_i - n_{is})!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{sa} - n_{sa} - 1)!}{(n_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(n_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

GÜLDENWA

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-lk_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - 1)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^{lk})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j_{sa}^{lk} + j_{sa} - j_s \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{lk} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 > l_s \wedge l_{sa} + j_{sa}^{lk} - j_{sa} = l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = lk \geq 2 \wedge$$

$$j_{sa}^{lk} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} \leq j_{sa} - 1 \wedge j_{sa}^{lk} = j_{sa}^{lk} - 1 \wedge$$

$$s \in \{j_{sa}^{lk}, lk_1, j_{sa}^{lk}, lk_2, j_{sa}^{lk}, \dots, j_{sa}^{lk}\} \wedge$$

$$s \geq 4 \wedge s = j_{sa}^{lk} \wedge$$

$$lk_2 = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{lk}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s - j_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

$$\sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}} \sum_{(j^{s_a}=j_i+j_{s_a}-s)}^{(l_s-l+1)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}
 \end{aligned}$$

GÜLDÜSÜZ

$$\begin{aligned}
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - l_s - j_{sa}^{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\
& \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{()} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{()} \sum_{j_i = l_i + n - D}^{l_s + s - l} \\
& \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_{z=2}^{(j_{ik}, j_{sa}^{ik}, j_{sa}^i)} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik}=j}^{(l_s - j_{sa} - 1)} \sum_{(j_{sa}^{ik} - j_{sa} - 1) \cup (-l_i + n + j_{sa} - D - s)}^{(l_s - j_{sa} - 1)} \sum_{j_i=j^{sa} + s - j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{j_s - l + 1} \frac{(j_s - l + 1 - k)!}{(j_s - l + 1 - k)!} \cdot \\
& \sum_{j_{ik}=j_{sa}^{sa}+1}^{j_{sa}^{sa}+j_{sa}^{sa}+j_{sa}^{sa}-l+1} \sum_{j_{is}=j_{sa}^{sa}}^{j_{sa}^{sa}+j_{sa}^{sa}-l+1} \sum_{j_{ik}=n+l_2}^{n+l_2-j_{ik}+1} \sum_{n_{is}=n+l_2-j_s+1}^{n+l_2-j_s+1} \sum_{n_{ik}=n+l_2-j_{ik}+1}^{n+l_2-j_{ik}+1} \sum_{n_{sa}=n-j_{sa}^{sa}+1}^{n_{sa}+j_{sa}^{sa}-j_i} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa}^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa}^{sa} - 1)! \cdot (n_{sa} + j_{sa}^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot
\end{aligned}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_{sa}+s-j_{sa}} \sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-k_1} \sum_{(n_{sa}=n_{ik}-j_s)}^{(\cdot)} \sum_{(j_{sa}-j_i)} \frac{(n_{ik}-j_{ik}-j_s-s-k_2)!}{(n_i+j_{ik}-n-k_1-j_{sa})! \cdot (j_{sa}-j_s-s)!} \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq 1 \wedge l_s \leq D - n - 1 \wedge$$

$$1 < j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n \leq D + j_i + s - n - 1 \wedge$$

$$D > n \wedge I = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^{ik_1}, j_{sa}^{ik_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^{\mathcal{S}}_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k+1}$$

$$\sum_{(n_{ik}+j_{ik}-j_{sa}^{ik})}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})} \sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})} \sum_{(n_s=n-j_i)}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l-s+1}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n + 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s - j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{\binom{()}{j_i=j^{sa}+s-j_{sa}}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})}^{\binom{()}{n_s=n_{sa}+j^{sa}-j_i}}$$

GÜLDÜSÜZ

AYLA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i + n - D - s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j_{sa} + 1)!} \cdot \\
 & \frac{(D - l_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa} - 1}^{j_{sa} - l - s + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa})}^{()} \sum_{j_i = j^{sa} + s - j_{sa}}^{()} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} - l_{k1}}^{n_{is} + j_s - j_{ik} - l_{k1}} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k2})} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜMNA

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$(l_s - l)$$

$$\sum_{j_s=l_i+n-D-s}^{l_s-l}$$

$$()$$

$$\sum_{j_{ik}=j_s+l_{ik}-1}^{j_{sa}=j_s+l_{ik}-1} (j_{sa}=j_s+l_{ik}-1) \sum_{j_{sa}=j_s+l_{ik}-1}^{j_{sa}=j_s+l_{ik}-1} (j_{sa}=j_s+l_{ik}-1) \sum_{j_{sa}=j_s+l_{ik}-1}^{j_{sa}=j_s+l_{ik}-1} (j_{sa}=j_s+l_{ik}-1)$$

$$\sum_{n+l_k}^n (n_{is}=n+l_k) \sum_{j_s+1}^{j_s+1} (j_s+1) \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > l_i \wedge n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_i + j_{sa} - s + 1)} \sum_{j_{ik}=j_{sa} + j_{sa}^{ik} - j_{sa}}^{(l_i + n + j_{sa} - D)} \sum_{j_i=j_{sa} + s - j_{sa}}^{(n - j_s + 1)} \sum_{n_i=n+1}^{n} \sum_{n_{is}=n+\mathbb{k}-1}^{n - j_s + 1} \sum_{n_{ik}=n+\mathbb{k}_2 - j_{ik} + 1}^{n - j_s + 1} \sum_{n_{sa}=n - j_{sa} + 1}^{n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2} \sum_{n_s=n - j_i + 1}^{n_{sa} + j_{sa} - j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{D}{l}} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{\binom{D-l}{j_s}} \sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{\binom{l_s+j_{sa}-l}{j_{ik}}} (j_{sa}^{sa}=l_i+n+j_{sa}-D-s) j_i=j_{sa}+s-j_{ik} \sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{\binom{n_i-j_s+1}{n_{is}}} \sum_{n_{ik}=n_{is}-j_{ik}-lk_1}^{\binom{n_{ik}}{n_{is}}} \sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{\binom{n_{sa}}{n_{ik}}} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}^{\binom{n_s}{n_{sa}}} \frac{(n_{ik}+j_{ik}-j_{sa}^{lk_2}-s-l_1)!}{(n_{ik}+j_{ik}-n-lk_2-j_{sa}^{lk_2})! \cdot (n_{ik}-j_{ik}-j_{sa}^{lk_2})!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq l_s + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{ik} \leq j_{sa}^{lk} \leq j_i + j_{sa} - s \wedge j_{sa}^{lk} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{lk} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_{sa} \leq D + l_s + j_{sa}^{lk} - n - 1 \wedge$$

$$\geq n < l_{sa} \wedge l = lk \Rightarrow$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s = j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, lk_1, \dots, lk_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$j_{sa}^s > 4 \wedge s + lk \wedge$$

$$lk_z: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{\binom{D-l}{j_s}} \sum_{(j_s=2)}^{\binom{j_{ik}-j_{sa}^{lk}+1}{j_s}}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \binom{(\quad)}{\sum_{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_{sa}+j^{sa}}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_{ik}-n_{is}+n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \binom{(\quad)}{\sum_{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{sa}^{ik} - l_{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_s + 1)!}$$

$$\frac{(n - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{-l+1} \sum_{(j_s=2)}$$

$$\sum_{j_s=j^{sa}+j^{sa}}^{n-l+1} \sum_{(l_s+j^{sa}-l+1)}^{n-l+1} \sum_{j_i=j^{sa}+s-j^{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k-1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k-2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{()} \sum_{j_s=j_{sa}^{ik}+1}^{()} \sum_{j_{ik}=j_{sa}+j_s^{lk}}^{(j_{sa}=l_{sa}+n)} \sum_{j_i=j_{sa}+s-j_{sa}}^{(j_s+1)} \sum_{n_i=n+lk}^{(n+lk-j_s)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-lk_1}^{(n_{sa}=n_{ik}+lk-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{(n_{ik}+j_{ik}-j_s-s-lk_2)!} \frac{(n_{ik} + j_{ik} - j_s - s - lk_2)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$j_s \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = lk \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, lk_1, j_{sa}^{ik}, lk_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=l_{sa}+j_{sa}-j_{ik}}^{()}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{is}+j_{sa}-n-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_i-n_{ik}-1)!}{(j_{ik}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_s-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n_{sa}+j_{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)}{(D+j_i-n-l)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^s = j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{()} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - l_s - j_{sa}^{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{l_s - l - 1} \sum_{(j_s = l_{sa} + n - D - j_{sa} + 1)}^{(l_s - l - 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{l_{sa} + j_{ik} - l - j_{sa} + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_{k_2} - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_{k_1}} \\
 & \frac{(n_{ik} + j_{ik} - j^{sa} - l_{k_2})!}{\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{sa} + j^{sa} - j_i)} \sum_{n_s = n - j_i + 1}} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l-1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_s-l)} \sum_{j_s=j_s+j_{sa}^{ik}-1}^{(j_s+l_{ik}-j_{ik}-l_s-1)}$$

$$\sum_{j_s=j_s+j_{sa}^{ik}-1}^{(j_s+l_{ik}-j_{ik}-l_s-1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_s-l)} \sum_{j_s=j_s+j_{sa}^{ik}-1}^{(j_s+l_{ik}-j_{ik}-l_s-1)}$$

$$\sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{(n_i-l_i-1)} \sum_{n_{is}=n+l_{k2}-j_s+1}^{(n_i-l_i-1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})}^{(n_i-l_i-1)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_i-l_i-1)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > n > l_i \neq l_i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{\binom{l_s}{k-j_{sa}^{ik}+1}} \sum_{l=2}^{\binom{l_s}{l}} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{\binom{n}{j_{ik}+j_{sa}-s}} \sum_{j_i=j_{ik}+s+n-D-j_{sa}^{ik}}^{\binom{n}{j_i-j_s+1}} \sum_{n_i=n+\mathbb{k}_1-j_{sa}+j_{sa}^{ik}-j_{sa}}^{\binom{n}{n_i-n+\mathbb{k}_1-j_{sa}+1}} \sum_{n_{is}=n+\mathbb{k}_2-j_{sa}+j_{sa}^{ik}-j_{sa}}^{\binom{n}{n_{is}-n+\mathbb{k}_2-j_{sa}+1}} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{\binom{n}{n_{ik}-j_{ik}+1}} \sum_{n_{sa}=n-j_{sa}+1}^{\binom{n}{n_{sa}+j_{sa}-j_i}} \sum_{n_s=n-j_i+1}^{\binom{n}{n_s-j_i+1}}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_s+s-l+1}^{l_{ik}+s-l-j_{sa}^{ik}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_k}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\sum_{(n_{sa}=n_{sa}^{sa}+1)}^{(n_{ik}+j_{ik}-l_k)} \sum_{(n_s=n-j_i)}^{(n_{sa}=n_{sa}^{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{ik}+s+n-D-j_{sa}^{ik}}^{l_s+s-l}$$

GÜLDÜZYAN

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s = l_s \wedge$

$D + j_{sa}^{ik} - n < l_{ik} \leq D + j_{sa}^{ik} - n = l_{sa}$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^i, \mathbb{k}_2, j_{sa}^i, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
& \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
& \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_{ik})!} \cdot \\
& \frac{(n_s-1)!}{(n_{is}+j_s-1)! \cdot (n-j_i)!} \cdot \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
& \frac{(l_{ik}-j_{ik}-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_{ik})! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
& \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
& \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
& \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_s+j_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
& \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot
\end{aligned}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_i - l + 1)! \cdot (j_i - l - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(s+j_{sa}-l)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(s+j_{sa}-l)} \\
 & \sum_{(j_s=j_{sa}+j_s^{ik})}^{(s+j_{sa}-l)} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})}^{(s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(s+j_{sa}-l)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_i-j_s+1)} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(s+j_{sa}-l)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(s+j_{sa}-l)} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{sa}^{ik}, j_i = \sum_{k=l}^{j_{ik} - j_{sa}^{ik} + 1} \sum_{(j_s=2)}^{(j_s=2)}$$

$$\sum_{j_{ik} = l_s + j_{sa}^{ik} - l}^{(l_s + j_{sa}^{ik} - l)} \sum_{(j_s=2)}^{(j_s=2)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(j_s=2)}$$

$$\sum_{i=n+\mathbb{k}}^n \sum_{(n_i=j_s+1)}^{(n_i-j_s+1)} \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=1}^{l_s - l + 1} \sum_{j_s=2}^{l_s - l + 1} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{j_{sa}=j_{ik} + j_{sa} - j_i}^{l_s - l + 1} \sum_{j_i=j_{sa} + s - j_{sa}}^{l_s - l + 1} \\
 & \sum_{n_i=n - j_{sa} + 1}^n \sum_{n_{is}=n + k_1 - 1}^{n - j_s + 1} \sum_{n_{ik}=n + k_2 - j_{ik} + 1}^{n - j_s + 1} \sum_{n_{sa}=n - j_i + 1}^{n - j_s + 1} \\
 & \sum_{a=n - j_{sa} + 1}^{n - j_s + 1} \sum_{n_s=n - j_i + 1}^{n - j_s + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j_{sa}+s-1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2})! \cdot (n_{is}-j_{ik}+l_{k1})! \cdot (n_{sa}+j_{sa}^{ik}-s)! \cdot (n_s-j_{sa}^{ik})!}{(n_{ik}+j_{ik}-n-l_{k2})! \cdot (n_{is}-j_{ik}+l_{k1})! \cdot (n_{sa}+j_{sa}^{ik}-s)! \cdot (n_s-j_{sa}^{ik})!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq l_{ik} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq l_{ik} + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \Rightarrow \dots \wedge$$

$$j_{sa} \leq j_i - 1 \wedge j_{sa} \leq j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, \dots, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$\dots \wedge 4 \wedge \dots - s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=2)}^{(l_{ik}+n-D-j_{sa}^{ik})}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}+1)!}{(j_{ik}-j_s+1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j^{sa}-j_{ik}+1)!(n_{is}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s+1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_s)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{sa}^{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2$$

$$fz \mathcal{S}_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_i+n-D}^{(l_i - l + 1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n+\mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_s - 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_s + 1)!} \cdot \\
& \frac{(D - l_i)!}{(n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik}=j_{ik}^{ik+1}}^{\sum_{j_s=j_{ik}-j_{sa}^{ik+1}}} \sum_{j_{sa}=j_i+j_{sa}-s}^{(j_s)} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
& \sum_{j_{ik}=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(j_s)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j^{sa})! \cdot (n + j^{sa} - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{j_i=j^{sa}+s-j_{sa}}^{l_{ik}-j_{sa}^{ik}} \sum_{j_s=2}^{(l_s-l)} \sum_{j_{ik}=l_{ik}+n-D}^{n} \sum_{n_i=n+\mathbb{k}}^{(n_i-1)} \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j^{sa}+1}^{(n_{sa}+j_{sa}-j_i)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j_{sa}=j_i+j_{sa}-j_{sa})}^{()} \sum_{(j_{sa}=j_i+j_{sa}-j_{sa})}^{()}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i=n+k)}^{(n_i-j_s+1)} \sum_{(n_i=n+k)}^{(n_i-j_s+1)} \sum_{(n_{sa}=n_i+j_{ik}-j_{sa})}^{(n_{sa}=n_i+j_{ik}-j_{sa})} \sum_{(n_s=n_{sa}+j_{sa}-j_i)}^{(n_s=n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = 1 \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l_i \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_s + s - n - 1 < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{K} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-l-s+1}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=l_i+n+j_{sa}^{ik}-D-s}^{()}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik}-1)}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{ik}-1) \cdot (n_{sa}+j^{sa}-j_i)}{\sum_{j_i=n-j^{sa}+1} \sum_{j_i+1}}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{ik}-n_{ik}-1)!}{(j_{ik}-j_{ik}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

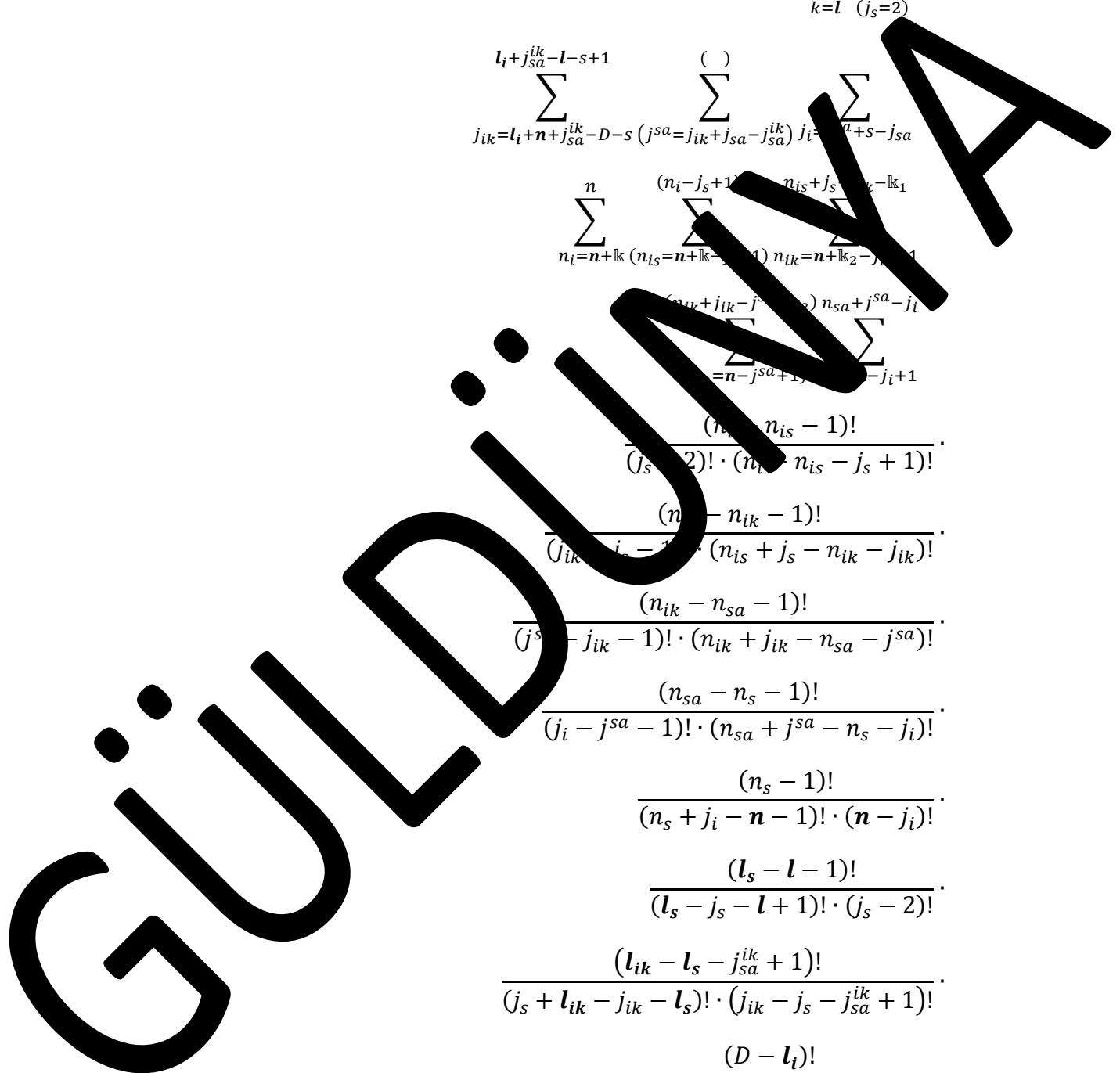
$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}$$



$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - lk_2)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^{lk})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s \leq j_{sa}^{lk} - 1 \leq j_{ik} - j_{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{lk} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 > l_s \wedge l_{sa} + j_{sa}^{lk} - j_{sa} - l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$$

$$l_{sa} - j_{sa} - n - l_{sa} \leq D - n - l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_{sa} = 0 \wedge$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, lk_1, j_{sa}^{lk}, j_{sa}^{lk} - 1, j_{sa}^{lk} - 1, j_{sa}^i\} \wedge$$

$$s \leq 4 \wedge j_{sa}^s = s + lk \wedge$$

$$lk_z: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$f^z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{(\quad)}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{\binom{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})}{n_{sa}=n-j^{sa}+1}} \sum_{\binom{(n_{sa}+j^{sa})}{n-j_i+1}} \\
 & \frac{\binom{(n_i-1)}{(j_s-2)!(n_i-n_{is}+1)!}}{\binom{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-n_{is}+n_{ik}-j_{ik})!}} \\
 & \frac{\binom{(n_{ik}-n_{sa}-1)}{(j^{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j^{sa})!}}{\binom{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!}} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\sum_{k=l}^{\binom{(\quad)}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{(\quad)}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - l_{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq l_i$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i + j_{sa} - s \wedge l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 = \dots$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{lk} - 1)!}{(j_s + l_{ik} - l_s - j_{sa}^{lk} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{lk} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}^{()} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{lk} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = l_{sa} + n - D)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDÜMWA

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{K} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_{z=2}^{j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{sa}+n+1}^{(l_{sa}+n+1-l-j_{sa}+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_s = j_{ik} - j_{sa}^{ik}}$$

$$\sum_{j_{sa} = j_{ik} - j_{sa}^{ik}}^{l_s + j_{sa}^{ik} - l} \sum_{j_i = j_s + j_{sa} - j_{sa}^{ik}} (j_{sa} = j_{ik} - j_{sa}^{ik}) j_i = j_s + j_{sa} - j_{sa}^{ik}$$

$$\sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1}^{n_{is} + \mathbb{k} + j_s + 1} \sum_{n_{sa} = n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2}^{n_{sa} = n_{is} + j_s + 1} \sum_{n_s = n_{sa} + j_{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D + n - 1 \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$\mathbf{s}: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge \mathbf{s} = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(l_s - l + 1)} \sum_{j_s=2} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{j_i=j_{sa}-s}^{(i+j_{sa}-s)} \sum_{j_i=n+s-D-j_{sa}^{ik}}^{l_{ik}+s-1} \sum_{n_i=n+j_{sa}-j_{sa}^{ik}-j_{sa}}^{n-j_{sa}+1} \sum_{n_{is}=n+\mathbb{k}_1-j_{sa}^{ik}-j_{sa}}^{n-j_{sa}+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n-j_{sa}+1} \sum_{n_{sa}=n-j_{sa}+1}^{n+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{ik}+s+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}+j_{ik}-n-k_2) \dots (n_{ik}+j_{ik}-n-k_2+1)}{(n_{ik}+j_{ik}-n-k_2)! \dots (n_{ik}+j_{ik}-n-k_2+1)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq \dots - 1 \wedge$$

$$1 \leq j_{ik} - j_{sa}^{ik} + \dots \wedge j_s + j_{sa}^{ik} - 1 \dots \geq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \dots \leq j_i - j_{sa} - s \dots + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge \dots + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$\dots + j_{sa}^{ik} - \dots < l_{ik} \leq D \dots l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq \dots < n \wedge l \dots = 0 \wedge$$

$$j_{sa} \leq j_{sa}^i \dots \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$\{j_{sa}^s, k_1, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\sum_{(n_{sa}=n+l_k-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa})} \sum_{(n_s=n-l)}^{n_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} + j_s - j_{ik} - 1)!}$$

$$\frac{(n_{is} - j_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_s^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j^{sa} + j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa}^{ik} \leq j_i \leq$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa}^{ik} \leq l_{sa} \wedge$

$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$

$D \geq n < n \wedge l = i \Rightarrow s \geq 0 \wedge$

$j_s \leq j_{sa}^l \Rightarrow j_{sa}^{ik} = j_{sa}^l - 1 \wedge j_{sa}^s = j_{sa}^l - 1 \wedge$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^l\}$

$s \geq 4 \wedge l = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}-l+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s - j_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{()}{j_s=j_{i_k}-j_{s_a}^{i_k}+1}}$$

$$\sum_{j_{i_k}=l_{i_k}+n-D}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{\binom{()}{j_i=j^{s_a}+s-j_{s_a}}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{(n_{s_a}=n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})}^{\binom{()}{n_s=n_{s_a}+j^{s_a}-j_i}}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=s+1}^{l_{ik}+j_{sa}^{ik}-l-s+1} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_{sa} - l_{sa} - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{sa} + 1)}^{(l_{sa} - l + 1)} \sum_{j_i = l_{ik} + j_{sa}^{ik} - l - s + 2}^{l_i - l + 1}$$

$$\sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_k - 1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_k - 2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{sa}^{ik} = j_{sa}^{ik} - j_{sa}}^{()} \sum_{j_i = j_i + j_{sa} - s}^{()} \sum_{j_i = s + 1}^{l_{ik} + j_{sa}^{ik} - l - s + 1} \\
& \sum_{n_{is} = n + l_k}^{(n_i - 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}} \\
& \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2}}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$n - l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{j_s=j_{ik}^{ik}+1}^{()} \sum_{j_{sa}+j_{sa}^{ik}+1}^{(j_i+j_{sa}-s)} \sum_{j_{ik}+1}^{(j_{sa}-j_{sa}+1)} \sum_{j_i=s+1}^{(j_{sa}-j_{sa}+1)} \sum_{n_i=n+\mathbb{k}_1}^{(n+\mathbb{k}_1-j_{sa}+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{(n+\mathbb{k}_2-j_{ik}+1)} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{sa}+j_{sa}-j_i)} \sum_{n_s=n-j_i+1}^{(n_s-1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜZMAYA

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+...)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{sa}^{ik}-l+1)}^{(l_{sa}-l+1)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+...)}^{(n_i-j_s+...)} \sum_{(n_{is}+j_s-j_{ik})}^{(n_{is}+j_s-j_{ik})}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - \dots)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDENWA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^a+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=s}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j_{sa}}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa})! \cdot (j_{sa})! \cdot (j_s-s)!}{(l_s-l-1)! \cdot (l_s-j_s-k_1+1)! \cdot (j_s-2)! \cdot (D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_{sa}^a \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa}^a \wedge l_{sa}^a + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = k_1 = 0 \wedge$$

$$j_{sa} \leq j_{sa}^a - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s, k_1, j_{sa}^{ik}, j_{sa}^i, j_{sa}\} \wedge$$

$$s \geq 4 \wedge s \leq s + k \wedge$$

$$z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_{sa}+1)}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_s}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j_{sa}=l_{ik}+j_{sa}^{ik}-l-s+2)}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1}
 \end{aligned}$$

GÜLDENWA

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_i - j^{s_a} - 1)! \cdot (n_{s_a} + j_i - n - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})^{j^{s_a} - l_{i_k}} \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!}$$

$$\frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} + l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{j_s=j_{i_k}-j_{s_a}^{i_k}+1}^{()}$$

$$\sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}}^{(l_{i_k}+j_{s_a}^{i_k}-l-s+1)} \sum_{(j^{s_a}=j_{s_a}+1)} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

GÜLDÜŞÜMÜ

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \binom{(\quad)}{\quad}}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_{sa} - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

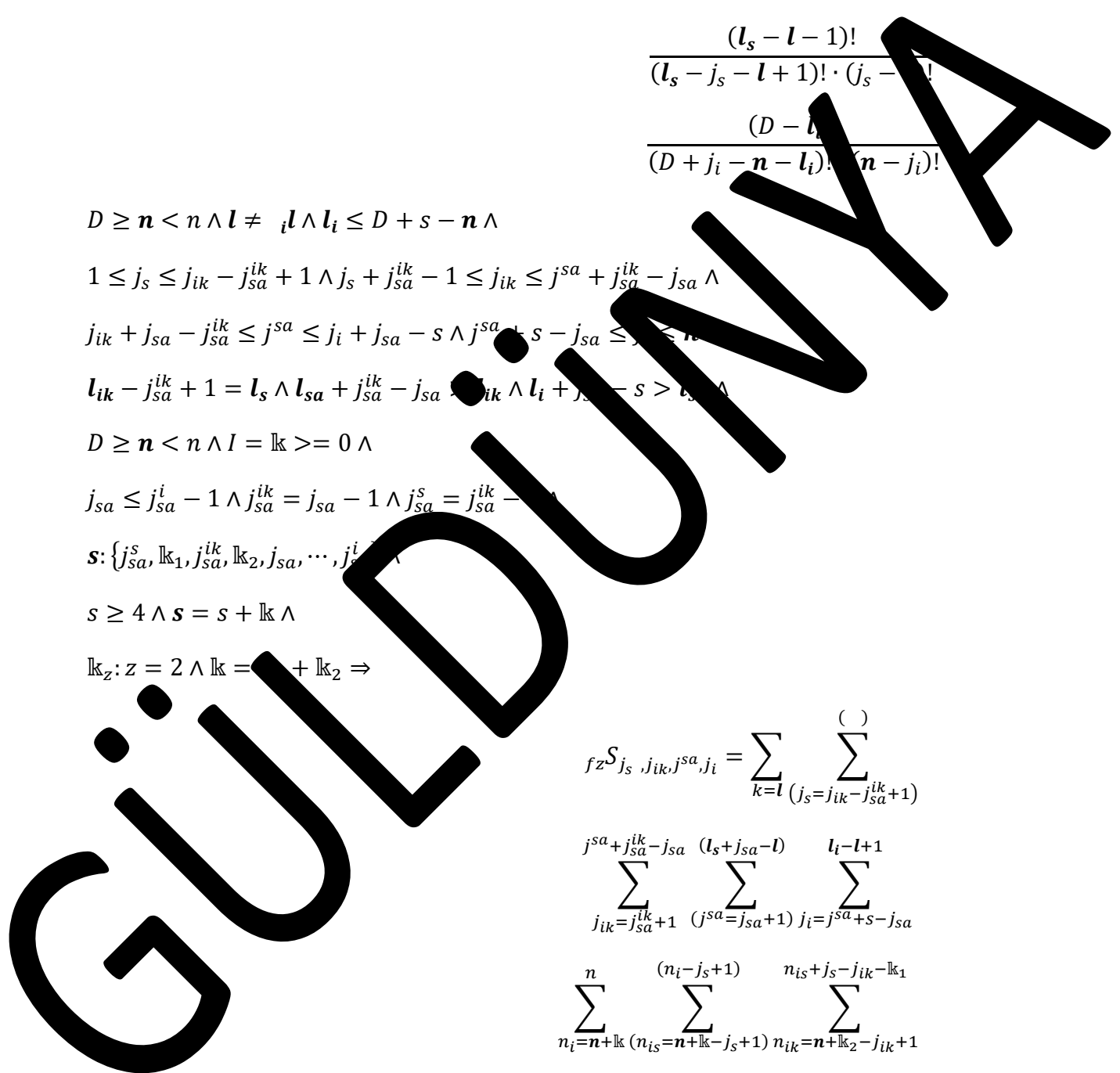
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \binom{(\quad)}{\quad} \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$



$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j^{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_s - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_i - l_{sa} - j^{sa})!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D + l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\cdot)} \\
& \sum_{j_{ik} = j_{sa}^{ik} + 1}^{l_s + j_{sa}^{ik} - l} \sum_{(j^{sa} = l_s + j_{sa} - l + 1)}^{(l_{sa} - l + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
& \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - k_1} \\
& \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
\end{aligned}$$

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa})!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(n - l_i) \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik}=j}^n \sum_{j_{sa}=j_{sa}+1}^{l_s+j_{sa}-l} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_s-j_{ik}+1} \\
& \sum_{i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_i-j_s+1)} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{j_s} \binom{j_s}{k} \binom{l_{ik}-l+1}{j_{sa}^{ik}+1} \binom{l_{sa}-l+1}{j_{sa}-j_{sa}^{ik}} \binom{l_i-l+1}{j_{sa}-j_{sa}^{ik}} \binom{n}{n_i+n+\mathbb{k}} \binom{n_i-j_s}{n_{is}=n+\mathbb{k}-j_s+1} \binom{n_{is}+j_s-j_{ik}-\mathbb{k}_1}{n_{ik}=n+\mathbb{k}_2-j_{ik}+1} \binom{n_{sa}+j_{sa}-j_i}{n_{sa}=n-j_{sa}+1} \binom{n_{sa}+j_{sa}-j_i}{n_s=n-j_i+1} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa}^{ik} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j_{sa}^{lk} + 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik} - j_{sa}^{lk} - j_{sa})}$$

$$\sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_i - j_s + 1)} \sum_{(n_{ik} = \dots + j_s - j_{ik} - \mathbb{k}_1)}$$

$$\sum_{(n_{sa} = \dots + j_{ik} - j_{sa}^{lk} - \dots)} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}$$

$$\frac{(n_{ik} + j_{ik} - \dots - s - \mathbb{k}_2)!}{(\dots + j_{ik} - \dots - \mathbb{k}_2 - \dots)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_{sa} = l \wedge l_i = D + s - l_{sa} \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + \dots + j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq \dots + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - \dots + 1 = l_s - \dots + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$\dots \wedge j_i = 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fzS_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}^{sa}-j_{ik}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{sa}-j_i)!}{(j_s-j_s+1)! \cdot (n_{is}-j_s+1)!} \cdot \frac{(n_{is}-j_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j_{sa}^{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=l_{k_2}+j^{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n+j_{sa}^{ik}-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l)!}{(D+l_s-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_s + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - j_l \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \wedge$

$D \geq n < n \wedge l = l_s = 0 \wedge$

$j_s \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa}^{ik} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$

$s: \{l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^i\}$

$\geq 4 \wedge l_s = s + l_k \wedge$

$l_{k_2}: z = 2 \wedge l_{k_2} = l_{k_2} - 2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{i_s}=n+l_k-j_s+1)}} \sum_{\substack{n_{i_s}+j_s-j_{ik}-l_{k_1} \\ n_{ik}=n+l_{k_2}-j_{ik}+1}} \\
 & \sum_{\substack{(n_{ik}+j_{ik}-j^{sa}-l_{k_2}) \\ (n_{sa}=n-j^{sa}+1)}} \sum_{\substack{n_{sa}+j^{sa}-j_i \\ n_s=n-j_i+1}} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{i_s} - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa})! \cdot j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{\substack{(\cdot) \\ (j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{i_s}=n+l_k-j_s+1)}} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l+1)!} \cdot \frac{(D-l+1)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_s - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_i-l+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j^{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_s - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
& \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{\binom{()}{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik}}} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2}} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^{\mathbb{k}_1, \dots, \mathbb{k}_2, j_{sa}^{ik}, j_i} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_{ik}=j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{(j_i=l_i+n-D)} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!} \cdot \\
& \frac{(l_i - l)!}{(D + j_i - n - l_i)! \cdot (j_i)!} + \\
& \sum_{j_{sa}^{ik}=j_{sa}^{ik}+1}^{l_{ik}-l} \sum_{j_{sa}^{ik}=j_{sa}^{ik}+1}^{(l_{sa}-l)} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2}^{l_i-l+1} \sum_{n_i=n+l_k}^{(n+l_k-1)} \sum_{n_{is}=n+l_k-j_s+1}^{(n+l_k-1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k-1} \sum_{n_{sa}=n-j_{sa}^{ik}+1}^{(n_{sa}+j_{sa}^{ik}-j_i)} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
\end{aligned}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\dots} \sum_{j_s=j_{sa}^{ik}+1}^{\dots} \sum_{l_{ik}+s}^{\dots} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}}^{\dots} \sum_{j_{sa}=j_i+j_{sa}-s}^{\dots} \sum_{j_i=l_i+n-D}^{\dots} \sum_{n_i=n+k}^{\dots} \sum_{n+k-j_s}^{\dots} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{\dots}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - j_s - s - k_2)! \cdot (n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_{sa} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(j_i+j_{sa}-s)} \sum_{l_i+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{is}+j_{ik}-j^{sa})! \cdot (n_{sa}+j^{sa}-j_i)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_i-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_s+s-l}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \sum_{(n_{sa}=n+l_k-j_s+1)}^{(n_{ik}+j_{ik}-j_s)} \sum_{n_s=n-j_i}^{(n_{sa}-j_s-j_i)} \\
 & \frac{(n_s - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - j_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDENWA

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j_{sa}=j_i+j_{sa}-s}} \sum_{l_s+s-l}^{l_s+s-l}$$

$$\sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2}}} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-l_{k_2})!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n+j_{sa}-s)!}$$

$$\frac{(l_s-l-1)!}{(j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{1}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - s \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq l_i + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_k \geq 1 \wedge$$

$$j_{sa} < j_{sa}^i - 1 \wedge j_{sa}^{ik} - j_{sa} - 1 \leq j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = j_{sa} - l_{k_2} \wedge$$

$$l_{k_2} = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j_{sa}=l_{sa}+n-D}} \sum_{j_i=l_i+n-D}^{l_i+n+j_{sa}-D-s-1} \sum_{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j_i - j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_i - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa})^{j^{sa} - l_{ik}} \cdot (j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}}$$

GÜLDÜSÜZ

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_s+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(j_i+j_s-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{ik}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}-l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{ik}+j_{sa}-l-j_{sa}^{ik}+2)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

GÜLDÜZMAYA

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \frac{(l_i + l_{sa} - l_{sa} - s)!}{(j_i + l_i - j_i - l_s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}} \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

GUIDANCE

A

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S(j_s, j_{ik}, j_i) = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_i+n+j_{sa}-D-s-1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa})!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!}$$

$$\frac{(l_i - l)!}{(n - l)! \cdot (n - j_i)!}$$

$$\sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{l_i - l + 1}$$

$$\sum_{j_i = j_{sa}^{ik} + 1}^{j_i - j_{sa}^{ik} - j_{sa}} \sum_{j_i = j_{sa}^{ik} + 1}^{l_i - l + 1} \sum_{j_i = j_{sa}^{ik} + 1}^{l_i - l + 1}$$

$$\sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_k - 1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_k - 2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

GÜLDENMYA

$$\begin{aligned}
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - l_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_s = j_{ik} - j_{sa}^{l_i}}^{l_s + j_{sa}^{l_i} - l + 1} \sum_{j_i = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \sum_{j_{ik} = j^{sa} - l_{sa} - l + 1}^{l_s + j_{sa}^{l_i} - l + 1} \sum_{j_{sa} = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \sum_{j_i = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \sum_{j_{ik} = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \sum_{j_{sa} = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \\
& \sum_{n = n + l_k}^n \sum_{n_{is} = n_{is} - j_s + 1}^{n_i - j_s + 1} \sum_{n_{ik} = n + l_{k_2} - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_{k_1}} \sum_{n_{sa} = n - j^{sa} + 1}^{n_{sa} + j^{sa} - j_i} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot
\end{aligned}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j^{sa} + j_{sa}^{lk} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = l_i + n + j_{sa} - l)} \dots$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_i - j_s + 1)} \sum_{n_{ik} = \dots + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa} = \dots + j_{ik} - j^{sa})} \sum_{n_s = n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - \dots - s - \mathbb{k}_2)!}{(\dots)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i \leq l \wedge l_s \leq D - n - 2 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + \dots \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq \dots + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 = l_s - j_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n - l_i \leq D + l_s + s - n - 1 \wedge$$

$$\dots \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{lk} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{lk}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-l}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{is}+j_{ik}-\mathbb{k}_1)}^{(n_{is}+j_{ik}-\mathbb{k}_2)}$$

$$\sum_{(n_{ik}+j^{sa}-\mathbb{k}_2)}^{(n_{sa}+j_i)} \sum_{(j^{sa}+j_i)}^{(n_s-n-j_i+1)}$$

$$\frac{(n_i - n_{is})!}{(i_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(i_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{is} - n_{sa} - 1)!}{(i_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMİN A

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})}^{(l_{sa} - l + 1)} \sum_{j_i = j_{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_i}^{n_{is} + j_s - j_{ik} - l_{k_1}} \\
 & \sum_{(n_{sa} = n - j_{sa} + 1)}^{(n_{ik} + j_{ik} - j_{sa} - l_{k_2})} \sum_{(n_{sa} + j_{sa} - n - j_i + 1)} \\
 & \frac{(n_i - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} + 1)!} \cdot \frac{(n_{is} - n_{ik} + 1)!}{(j_{ik} - j_s + 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{sa} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{\binom{(\cdot)}{}} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}^{\binom{(\cdot)}{}}
 \end{aligned}$$

$$\sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})}^{\binom{(\cdot)}{}} \sum_{j_i = j_{sa} + s - j_{sa}}^{\binom{(\cdot)}{}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{ik} \wedge$$

$$D + s - n < l_i \leq D + l_s + j_{sa}^{ik} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k}$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_s+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(n_s+j_i-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{lk}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}-l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_s+j_{sa}^{lk}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(j_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j_i + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(\cdot)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{sa}^{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j_{sa}=l_{sa}+n-D)}^{(l_i-l+1)} \sum_{j_i=l_i+n-D}^{(l_i-l+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \\
& \frac{(l_i - 1)!}{(D + j_i - n - l_i)! \cdot (j_i)!} + \\
& \sum_{k=1}^{(l_{ik} - l - j_{sa}^{lk} + 2)} \sum_{j=0}^{D-s+1} \\
& \sum_{j_s=j_s+j_{sa}^{lk}-1}^{(l_{sa}-k+1)} \sum_{j_{ik}=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^{(n-l_s+1)} \sum_{n_{is}=n+l_k-j_s+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
& \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{(n_{ik}+j_{ik}-j_{sa}-l_{k2})} \sum_{n_{sa}=n-j_{sa}+1}^{n_{sa}+j_{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
\end{aligned}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{i=l_i+n-s+1}^{(l_{ik} - j_{sa}^{ik} + 2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}} \sum_{j_{sa}=j_{ik}+j_{sa}-j_s} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k} \sum_{n_i=n+l_k-j_s} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - j_s - s - l_{k2})! \cdot (n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - j_{sa}^{ik} - l = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_{k2} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k1}, j_{sa}^{ik}, l_{k2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^{S_{j_s, j_{ik}, j^{sa}, j_i}} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s+1)}^{n_{is}+j_s-k-\mathbb{k}_1}$$

$$\sum_{(n_{ik}+j_{ik}-j_s-\mathbb{k}_2)}^{(n_{ik}+j_{ik}-j_s-\mathbb{k}_2)} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

GÜLDÜMÜYA

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i-l+1)} \sum_{j_i=j^{sa}+s-j} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k} \\
 & \frac{(n_{ik}+j_{ik}-k) \cdot (n_{sa}+j_{sa}-j_i)}{(n_{sa}=j_{sa}+1) \cdot (n_s=n-j_i)} \\
 & \frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} + n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}
 \end{aligned}$$

GÜLDENWA

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-j_{sa}-lk_2)!}{(n_{ik}+j_{ik}-n-lk_2-j_{sa})! \cdot (n+j_{sa}-s)!}$$

$$\frac{(j_s-l-1)!}{(j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D)}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_{ik} - j_{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge j_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik} \wedge j_{sa} + j_{sa} - s > l_{sa} \wedge$$

$$D - s - n < l_s \leq D + l_s - s - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_s = 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, lk_1, j_{sa}^{lk_1}, j_i, j_{sa}^i, j_{sa}^i\} \wedge$$

$$s \leq 4 \wedge j_{sa}^s = s + lk \wedge$$

$$lk_z: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa})}^{(n_{sa}+j^{sa})} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_{ik}-1) \cdot (n_{is}+j_{ik}-n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\quad)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_{ik}+s-l-j_{sa}^{ik}+1}
 \end{aligned}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_s^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l - l_i)! \cdot (n - j_i - l)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$
 $D + l_s + s - n - l_i + 1 \leq l \leq i \wedge$
 $1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_s \leq j^{sa} + j_{sa}^{ik} - 1 \wedge$
 $j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq j_{sa} \wedge$
 $l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa} - j_{sa} > l_{ik} - l_i + j_{sa} - l_{sa} \wedge$
 $D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$
 $D \geq n < n \wedge l = i \Rightarrow l = 0 \wedge$
 $j_s \leq j_{sa}^l - j_{sa}^{ik} = j_{sa}^l - 1 \wedge j_{sa}^s = j_{sa}^l - 1 \wedge$
 $s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^l\}$
 $s \geq 4 \wedge l = s + \mathbb{k} \wedge$
 $\mathbb{k}_z: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j_i - j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa})! \cdot j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}
 \end{aligned}$$

GÜLDEN

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - l_{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq l_i$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_i + j_{sa} - s \wedge l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{j_i=l_i+n-D}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(\cdot)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(\cdot)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)} \sum_{j_{ik}=j^{sa} + j_{sa}^{ik} - j_{sa}}^{(j_i + j_{sa} - s)} \sum_{(j^{sa}=j_{sa} + 1)}^{l_s + s - l} \sum_{j_i=s+1} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n+\mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \frac{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2) n_{sa} + j^{sa} - j_i}{(n_{sa} = n - j^{sa} + 1) n_s = n - j_i + 1} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

GÜLDÜNYA

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - j^{sa} + 1)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_{sa} - l_{sa} - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i - 1)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
& \sum_{k=j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_{sa} - l + 1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i - l + 1} \sum_{j_i=l_s+s-l+1}^{l_i - l + 1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is} + j_s - j_{ik} - l_{k1}} \\
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik} + j_{ik} - j^{sa} - l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot
\end{aligned}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-l_{sa}}^{(n_i-1)} \sum_{j_i=s+1}^{l_s+s-l} \sum_{j_{sa}=j_i+j_{sa}-s}^{(n_i-1)}$$

$$\sum_{n+l_k}^{(n_i-1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_i-1)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_i-1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(n_i-1)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_i-1)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$n > n - l \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_{k_2} \geq 0 \wedge$$

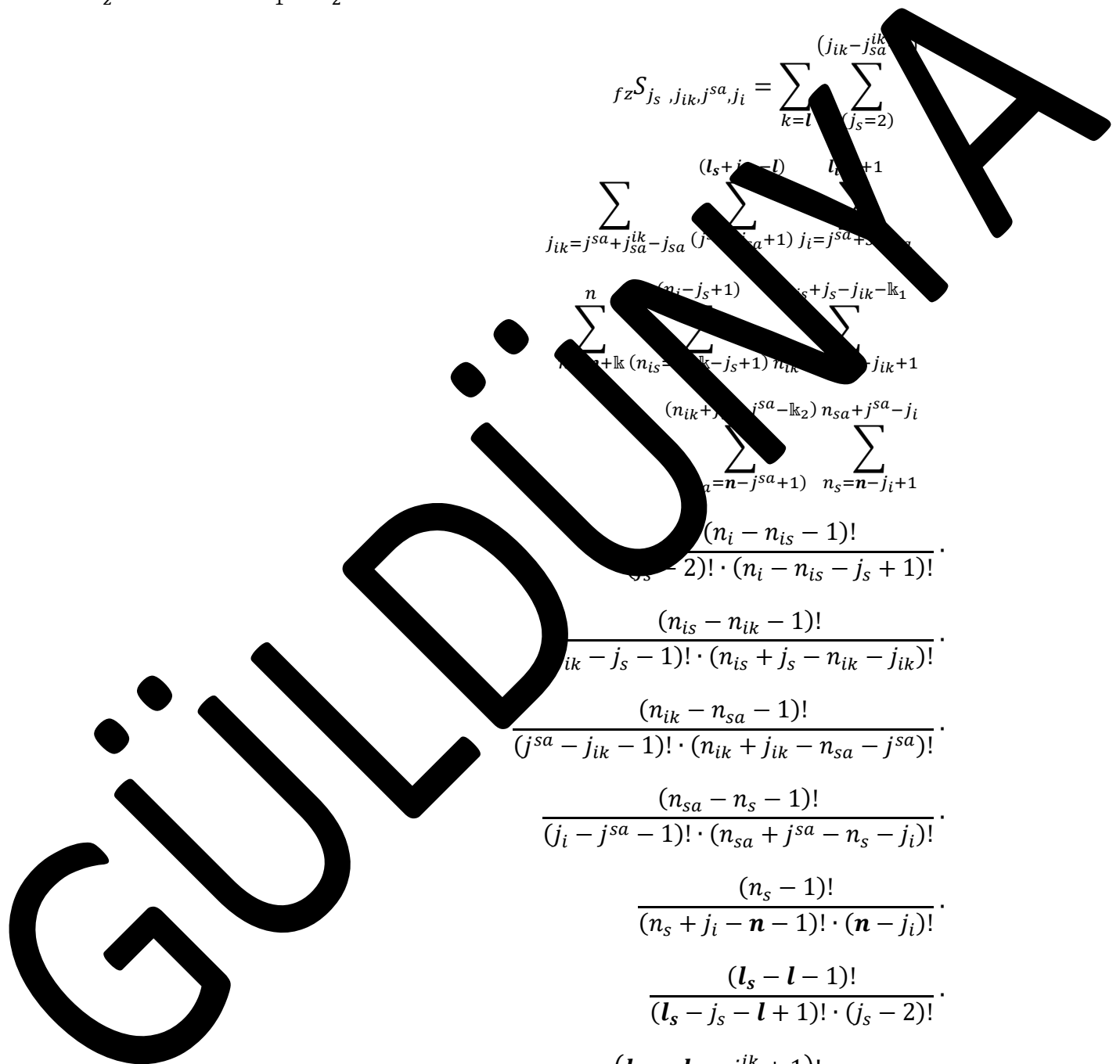
$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{l_s+1} \sum_{j_{ik}=j_{sa}^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_s-1)} \sum_{(j_s=2)}^{l_s+1} \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{is}-\mathbb{k}-j_s+1)}^{(n_{is}-\mathbb{k}-j_s+1)} \sum_{(n_{ik}-j_{ik}+\mathbb{k}_1)}^{(n_{ik}-j_{ik}+\mathbb{k}_1)} \sum_{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{(n_{sa}+j_{sa}-j_i)}^{(n_{sa}+j_{sa}-j_i)} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$



$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = 2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_{sa} - l + 1)} \sum_{(j^{sa} = l_s + j_{sa} - l + 1)}^{(l_i - l + 1)} j_{ik}^{(l_s + s - j_{sa})} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + j_{ik} - k_1)}^{(n_{is} + j_{ik} - k_1)} \\
 & \sum_{(n_{sa} = n - j_i + 1)}^{(n_{ik} + j_{ik} - l - k_2)} \sum_{(n_{sa} = n - j_i + 1)}^{(n_{sa} + j^{sa})} \\
 & \frac{(n_{is} - 1)!}{(n_{is} - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{ik} - 1)!}{(n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZÜM YA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^a+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}^a=j_{sa}+1)} \sum_{j_i=j_{sa}^a+s-j_{sa}}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-s-l_{k_1})!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (n_{ik}+j_{ik}-j_{sa}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa}^{ik} - j_{sa}^a \leq j_{sa}^{ik} \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$

$D \geq n < n \wedge I = l_{k_1} = 0 \wedge$

$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s \leq s + l_k \wedge$

$z: z = 2 \wedge k = l_{k_1} + l_{k_2} \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(\cdot)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \binom{(\quad)}{\quad} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \binom{(n_i-j_s+1)}{\quad} \sum_{n_{ik}=n+l_{k_2}-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \binom{(\quad)}{\quad} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{(n_{s_a}=n-j^{s_a}+1)}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_i - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s - j_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!} \cdot \\
 & \frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} + l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{\sum} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{(\)}$$

$$\sum_{j_{i_k}=j_{s_a}^{i_k}+1}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{(\)} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

GÜLDÜSÜZ

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_i \wedge l_i + j_s - s > l_s \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GUIDANCE

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_{z=2}^{(j_{ik}, j_{sa}^{ik}, j_{sa})} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_i + j_{sa} - s)} \sum_{(j_{ik}=j_{sa} + j_{sa}^{ik} - j_{sa})}^{(j^{sa} = l_{sa} + n - D)} \sum_{(j_i = l_i + n - D)}^{(l_s + s - l)}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1)}^{(n_{is} + j_s - j_{ik} - \mathbb{k}_1)}$$

$$\sum_{(n_{sa} = n - j_{sa} + 1)}^{(n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2)} \sum_{(n_s = n - j_i + 1)}^{(n_{sa} + j_{sa} - j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!}$$

$$\frac{(l_i - 1)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_s=2}^{l_s-l+1} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}^{sa}=l_{sa}+n-D}^{n} \sum_{n_i=n+l_k}^{(n_i+l_s+1)} \sum_{n_{is}=n+l_k-j_s+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{ik}+j_{ik}-j^{sa}-l_{k2}} \sum_{n_{sa}=n-j^{sa}+1}^{n_{sa}+j^{sa}-j_i} \sum_{n_s=n-j_i+1}^{n_s}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

GÜLDENWA

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{j_s=j_{ik}^{ik}+1}^{()} \sum_{j_{ik}=j^{sa}+1}^{()} \sum_{(j^{sa}=j_i+s)}^{()} \sum_{j_i=l_i+n-D}^{()}$$

$$\sum_{n_i=n+k_1}^{()} \sum_{n_i=n+k_2-j_s}^{()} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{()}$$

$$\sum_{n_{sa}=n_{ik}^{ik}-j^{sa}-k_2}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_i+n+j_{sa}-D-s-1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_s+1}^{n_{is}+j_s-n-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-n_{sa}+j^{sa}-j_i)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!}$$

$$\frac{(n_{ik}-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

GÜLDENYA

$$\begin{aligned}
 & \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \sum_{(n_{sa}=n_{sa}^{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa})} \sum_{n_s=n-j_i}^{n_{sa}-j_{sa}-j_i} \\
 & \frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{is} - n_{ik} - j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-n_{is}+n_{ik}-j_{ik})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(l_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}
 \end{aligned}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_s^s-j_s-s-\mathbb{k}_2)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-1)! \cdot (l-2)!} \cdot \frac{(D-l_i)!}{(D+j_i-l-1)! \cdot (n-j_s-1)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{ik}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + j_{sa}^{ik} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^s - \mathbb{k}_2, j_{sa}^s - j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k}$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_s+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(j_i+j_s-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(l_{ik}-j_{ik}-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_{sa}-s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_s+j_{sa}^{lk}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \sum_{n_i=n+l_{k1}}^n \sum_{(n_{is}=n+l_{k1}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l - 1)!}{(n - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i - l_{sa} - l_s)!}{(j_s + l_i - j_i - l_s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i=j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_s - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - 1)! \cdot (j_{ik} - j_s - l + 1)!}$$

$$\frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - j_{sa} - l_s - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_i+1}^{()} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{sa}, j_i} = \sum_{k=l}^{l_i+n-D-s} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_i=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) \sum_{n_s=n-j_i+1}}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - l_i)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{j_s=l_i+n-D-s}^{l_s-l} \binom{l_s-l}{j_s} \cdot \\
 & \sum_{j_{ik}=j_s+l_{ik}-1}^{l_{ik}-l+1} \binom{l_{ik}-l+1}{j_{ik}} \cdot \sum_{j_{sa}=j_{sa}^{ik}+j_{sa}-j_{sa}^{ik}}^{l_i-l+1} \binom{l_i-l+1}{j_{sa}} \cdot \\
 & \sum_{n_i=n+l_k}^n \binom{n_i-j_s+l_k}{n_i} \cdot \sum_{n_{is}=n_{is}-j_s+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \binom{n_{is}+j_s-j_{ik}-l_{k1}}{n_{is}} \cdot \\
 & \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{ik}+j_{ik}-j^{sa}-l_{k2}} \binom{n_{ik}+j_{ik}-j^{sa}-l_{k2}}{n_{ik}} \cdot \sum_{n_{sa}=n-j^{sa}+1}^{n_{sa}+j^{sa}-j_i} \binom{n_{sa}+j^{sa}-j_i}{n_{sa}} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot
 \end{aligned}$$

GÜLDENWALD

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+k)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}^{ik}-1)} \sum_{(j_i=j_s+j_{sa}^{ik}-j_{sa})}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+l_{sa}^{ik}-1)}^{(n_i-j_s+l_{sa}^{ik}-1)} \sum_{(n_{ik}=n_i+j_s-j_{ik}-k_1)}$$

$$\sum_{(n_{sa}=n_i+j_{ik}-j_s^{sa}-1)}^{(n_{sa}=n_i+j_{ik}-j_s^{sa}-1)} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - k_2)!}{(n_{sa} + j_{sa} - k_2 - j_s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_s = D - n - 1 \wedge$$

$$D + j_i + s - n - l_i - 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_s - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa}^{ik} \leq j_i \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$l_s - 1 < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{=l_i+n-D}^{(l_i-l+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s+1)}^{n_{is}+j_s-n-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(n_{is}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

GÜLDENWA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j_s}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2) \cdot (j_{sa}^s)! \cdot (j_s-s)!}{(n_{ik}-j_{ik}-n-k_2) \cdot (j_s-l-1)!}$$

$$\frac{(l_s-j_s+1)! \cdot (j_s-2)!}{(D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq n + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_i \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \geq l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k_1 = 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s, k_1, j_{sa}^{ik}, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k: z = 2, k = k_1 + k_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=s+1}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-2)!(n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s + l_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!} \cdot \\
 & \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a} - j^{s_a} - l_{i_k})! \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{j_s=j_{i_k}-j_{s_a}^{i_k}+1}^{()} \\
 & \sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}}^{()} \sum_{j^{s_a}=j_i+j_{s_a}-s}^{()} \sum_{j_i=s+1}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}
 \end{aligned}$$

GÜLDÜŞMAYA

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \binom{(\quad)}{\quad}}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$f_z^S j_s, j_{ik}, j_{sa}, j_i = \sum_{k=l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - 1)! \cdot (j_{ik} - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(n_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^{ik} - l_{ik})! \cdot (j_{ik} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k2}) \cdot n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDÜZ

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_s+j_{sa}-l} \sum_{j_{sa}=j_{sa}+1}^{j_{sa}} \sum_{j_i=j_{sa}+s-j_{sa}}^{n} \sum_{l_i=n+k}^{(n_i-j_s+1)} \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{(n_i-j_s+1)} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_i-j_s+1)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{sa}^{ik}+1)} \frac{\sum_{j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{j_{sa}^{ik}+1}^{(l_{sa}-l+1)} \sum_{j_{sa}^{ik}+1}^{(j_{sa}^{ik}+1)} \frac{(j_{sa}^{ik}+1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\begin{aligned}
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa})}^{(l_{sa} - l + 1)} \sum_{(j_{sa} - j_{sa})}^{(l_s - l + 1)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i - j_s + 1)}^{(n_i - j_s + 1)} \sum_{(n_{is} + j_s - j_{ik})}^{(n_{is} + j_s - j_{ik})} \\
 & \sum_{(n_{ik} + l_k - j_{ik} + 1)}^{(n_{ik} + l_k - j_{ik} + 1)} \sum_{(j^{sa} - j_i)}^{(j^{sa} - j_i)} \\
 & \sum_{(n_{sa} = n - j_i + 1)}^{(n_{sa} = n - j_i + 1)} \sum_{n_s = n - j_i + 1}^{(n_s = n - j_i + 1)} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j^{sa}+s-1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-s)! \cdot (n_{is}-j_{ik}+l_{k_1}-s)! \cdot (l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq l \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq l_s + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq l < n \wedge l = l_{k_1} + l_{k_2} \neq 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^{ik}, j_{sa}^{ik}, l_{k_2}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = l_{k_1} + l_{k_2} \wedge$$

$$l_{k_2} = l_{k_1} \wedge l_{k_1} = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n_{sa}+j_{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \frac{(n_{is}-n_{ik}+1)!}{(j_{ik}-j_s+1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j_{sa}-j_{ik}+1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \frac{(n_{sa}-n_s+1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j_{sa}+s-j_{sa}}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_s^s-j_s-s-\mathbb{k}_2)!} \cdot \frac{(l_s-l-\mathbb{k}_2)!}{(l_s-j_s-\mathbb{k}_2-1)! \cdot (l_s-\mathbb{k}_2-2)!} \cdot \frac{(D-l_i)!}{(D+j_i-l_i-\mathbb{k}_2-1)! \cdot (n-j_s-\mathbb{k}_2-1)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{ik}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i > l_{ik} \wedge l_{sa} + j_{sa} - s = l_i \wedge$$

$$D + s - n < l_i \leq D + l_s + \mathbb{k}_2 - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \mathbb{k}_1, j_{sa}^i - \mathbb{k}_2, j_{sa}^i, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k}_2$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S(j_s, j_{ik}, j^{sa}, j_i) = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{sa}^{ik} - l_{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} + j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(j_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_s - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\quad)} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(\quad)} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{(\quad)} \sum_{j_i = l_i + n - D}^{l_s + s - l} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(\quad)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

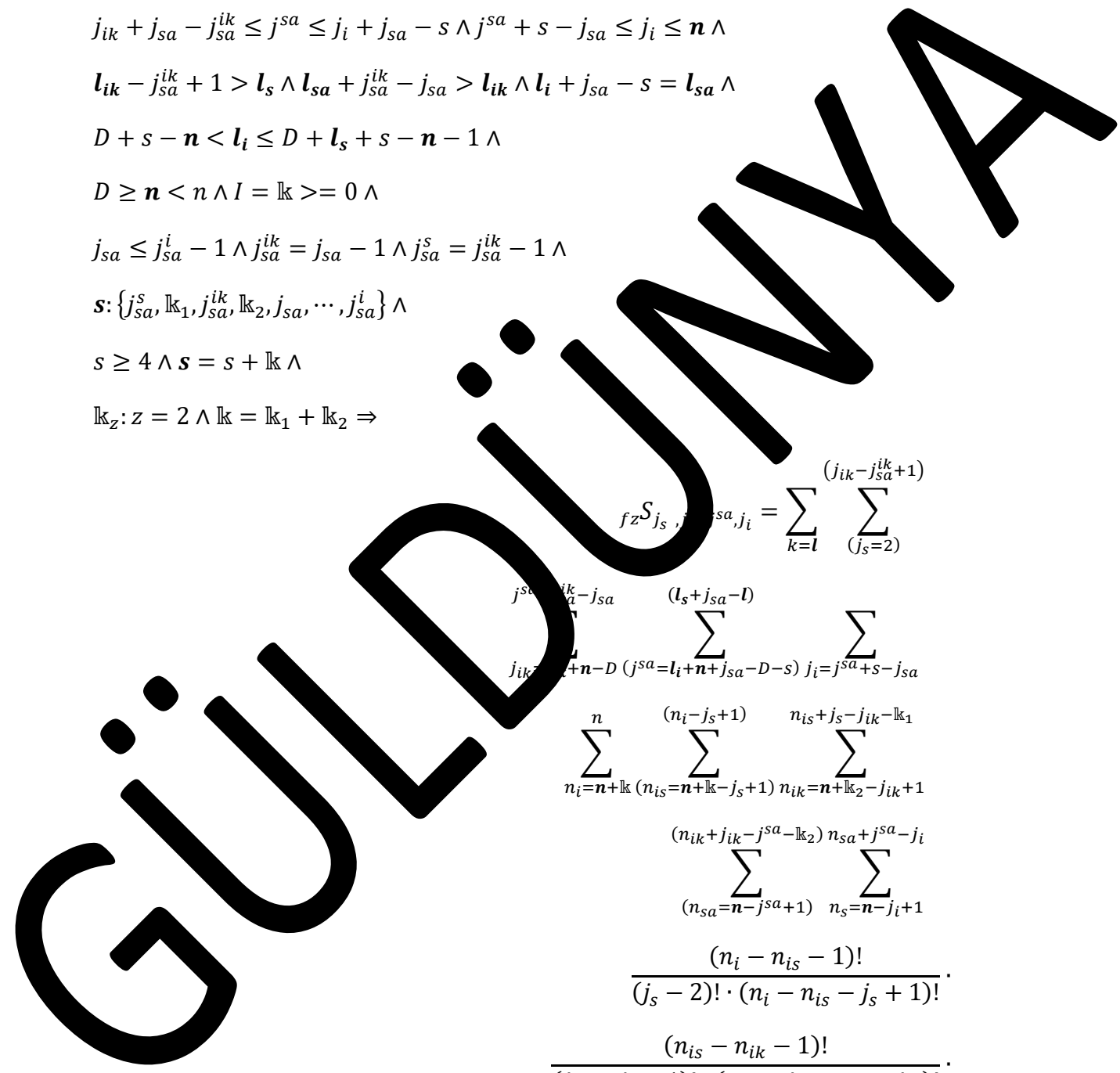
$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$



$$f_z S_{j_s, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(l_s + j_{sa} - 1)} \sum_{(j_{ik} = n - D + j^{sa} = l_i + n + j_{sa} - D - s)}^{(n_i - j_s + 1)} \sum_{(j_i = j^{sa} + s - j_{sa})}^{(n_{is} + j_s - j_{ik} - \mathbb{k}_1)} \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{sa} + j^{sa} - j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_s - l + 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!}$$

$$\frac{(D - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{j_s - l + 1} \sum_{(j_s=2)}$$

$$\sum_{i_{ik}=l_{ik} - l + 1}^{l_{ik} - l + 1} \sum_{i_{is}=l_s + j_{sa} - l + 1}^{(l_i - j_s - l - s + 1)} \sum_{j_i=j^{sa} + s - j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{j_s=j_{ik}-j_{sa}^{ik}+1} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_s}^{j_{ik}=j^{sa}+j_{sa}^{ik}-j_s} \sum_{j_{sa}=l_i+l_{sa}+j_s-D-s}^{j_{sa}=l_i+l_{sa}+j_s-D-s} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_i=j^{sa}+s-j_{sa}} \sum_{n+l_{ik}+j_s+1}^n \sum_{n_{is}=n+l_{ik}+j_s+1}^{n_{is}=n+l_{ik}+j_s+1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2}}^{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2}} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j_{sa}=l_i+n+D-s)}^{(l_i+j_{sa}-l-s)} \sum_{j_i=j_{sa}+s}^{(n-j_s+1)}$$

$$\sum_{(n_{is}=n_{ik}-j_s+1)}^{n} \sum_{(n_{ik}+j_{sa}-\mathbb{k}_2)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)} \sum_{(n_s=n-j_i+1)}^{(n_{ik}+j_{sa}-\mathbb{k}_2)} \sum_{(n_s=n-j_i+1)}^{(n_{ik}+j_{sa}-\mathbb{k}_2)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜZYA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_{sa}^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-1}^{n_{is}+j_s-l_k-1} \\
 & \sum_{(j_{sa}=n-j_s)}^{(n_{ik}+j_{ik}-l_k-1)} \sum_{(j_{sa}=n-j_s)}^{(n_{sa}+j_{sa}-j_{sa}^{sa})} \\
 & \frac{(n_{is} - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-l_k) n_{sa}^{j_{sa}-j_i}}{(n_{sa}=j_{sa}+1) n_s=n-j_i}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} + n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDÜŞMAYA

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n_s=l_{k_2}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^{ik})! \cdot (n + j_{sa}^{ik} - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - s)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - s \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - s > l_{ik} \wedge l_{sa} - j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_i \leq l_i + l_s + s - n = D$

$D > n < n \wedge l = l \wedge l_s > D - n + 1$

$j_{sa}^{ik} - j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa}^{ik} - 1 = j_{sa}^{ik} - 1 \wedge$

$\{j_{sa}^{ik}, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s \geq 4 \wedge s = s - l_s + 1$

$l_{k_2} - l_2 = l_{k_2} - l_2 \wedge l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{sa} + j^{sa} - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_{ik}-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2}) n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(j_i+j_s-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(l_{ik}-j_{ik}-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_{ik})! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \sum_{k=1}^{(l_s-l+1)} \sum_{(j_s=l_i+n-d-s+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

GÜLDENWA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(n_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^{ik} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k-1} \\
 & \frac{(n_{ik}+j_{ik}-j^{sa}-l_k-2) \cdot n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) \cdot n_s=n-j_i+1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_i = n + l_i}^n \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{l_s + s - l} \sum_{j_i + j_{sa} - s}^{l_s + s - l} \sum_{j_i = l_{sa} + n + s - D - j_{sa}}^{l_s + s - l} \\
& \sum_{l_i = n + l_i}^n \sum_{(n_i = n + l_i - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_i - j_s + 1)} \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{(n_i - j_s + 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(n_i - j_s + 1)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

GÜLDÜNKYA

$$fz^S j_s, j_{ik}, j_{sa}^{ik} = \sum_{l=1}^{\mathbb{k}+1} \sum_{(j_s=2)}^{j_s} \dots$$

$$j_{sa} + j_{sa}^{ik} - j_{sa} \quad (l_s + j_{sa} - j_{sa}^{ik})$$

$$j_{ik} = l_{ik} - D \quad (j_{sa} = n - D) \quad j_i = j_{sa} + s - j_{sa}$$

$$\sum_{j_{sa} = n - \mathbb{k} - j_s + 1}^n \sum_{n_{is} = j_s - j_{ik} - \mathbb{k}_1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{j_{sa} = n - j_s + 1}^n \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2} \sum_{n_{sa} = n - j_{sa} + 1}^{n_{sa} + j_{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{l_s-l+1} \sum_{s=2}^{l_s}$$

$$\sum_{j_{ik}=l_{ik}+n}^{l_{ik}-l+1} \sum_{j_{sa}=l_s+j_{sa}-l}^{(l_s-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l}^n \sum_{n_{is}=n+l_k-1}^{j_s+l} \sum_{n_{ik}=n+l_{k2}-j_{ik}+1}^{j_{ik}-l_{k1}}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{j_{ik}+j_{ik}-j^{sa}-l_{k2}} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa} + j_{sa}^{ik} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j_{sa} = l_{sa} + n - l)}$$

$$\sum_{n_i = n + k}^n \sum_{(n_i = n + k)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n_i - j_s - k_1)}$$

$$\sum_{(n_{sa} = n_i - j_{ik} - j_{sa}^{ik})} \sum_{n_s = n_{sa} + j_{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_s \leq D - n - 1 \wedge$$

$$1 \leq j_{sa} \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{sa} + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - 1 \wedge l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$l_i \wedge I = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_{is}+j_{ik}-\mathbb{k}_1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{j_{ik}+1}^{n+\mathbb{k}-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j_i}{\sum_{n=j^{sa}+1}^{n-j^{sa}+1} \sum_{n_s=n-j_i+1}^{n_s}}$$

$$\frac{(n_i - n_{is})}{(j_s - 2) \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1) \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{sa} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

GÜLDÜZMİNAR

$$\begin{aligned}
 & \sum_{j_{ik}=l_s+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n_{sa}+j_{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)!(n_{is}+j_s-n_{ik}-j_{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

GÜLDENWA

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} - n_{i_k} - j_{i_k})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} - n_{i_s} - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_{i_k} - j^{s_a} - 1)! \cdot (n_{s_a} + j^{s_a} - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s - j_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!}$$

$$\frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a} - j^{s_a} - l_{i_k})! \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{()}$$

$$\sum_{j_{i_k}=l_{s_a}+n+j_{s_a}^{i_k}-D-j_{s_a}}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{()} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

GÜLDÜŞME

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_s - j_s - 1)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$

$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^s = j_{sa} - 1 \wedge$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$

$s \geq 4 \wedge s = s + 1 \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{ik})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l - 1)!}{(n - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_s - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l - 1)} \sum_{(j_s = l_{sa} + n - D - j_{sa} + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + l_k}^n \sum_{(n_{is} = n + l_k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + l_k - j_{ik} - 1}^{n_{is} + j_s - j_{ik} - l_k - 1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - l_k - 2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot
 \end{aligned}$$

GÜLDÜZMAYI

$$\begin{aligned}
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j_{sa} - 1)! \cdot (j_{ik} - j_s - l_s + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik} - 1)! \cdot (j^{sa} + j_{sa} - j_{ik} - j^{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s - l - 1)} \sum_{(j_s = l_{sa} + n - D - j_{sa} + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{(j_s - l - 1)} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_{is} = n + \mathbb{k}_1 - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(j_s - l - 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{j_s, j_{ik}, j_i} &= \sum_{k=l}^{s-l+1} \sum_{(j_s=2)}^{s-l+1} \\ &\sum_{j_{ik}=l_{ik}^{l-1}}^{l_{ik}^{l-1}} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{l_i-l+1} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\ &\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\ &\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ &\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

GÜLDÜNYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_s+s-l} \sum_{j_{ik}=j_{sa}^{ik}-j_{sa}}^{l_s+s-l} \sum_{j_i=j_i+j_{sa}-s}^{l_s+s-l} \sum_{j_i=l_i+n-D}^{l_s+s-l} \sum_{n+l_k}^n \sum_{(n_{is}=n+j_s+1)}^{(j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D - n - 1 \leq l \leq l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l_s}^{(l_s-l+1)} \sum_{j_s=2}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_{ik}^{l+1}}^{l_{ik}^{l+1}} \sum_{(j_{sa}=l_{sa}^{l+1})}^{(l_s-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n}^n \sum_{n_{is}=n+\mathbb{k}_1}^{n-j_s} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}-j_{ik}-\mathbb{k}_1}$$

$$\sum_{a=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜNYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)}$$

$$\sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_{sa}^{sa} + s - j_{sa}}^{()}$$

$$\sum_{n_i = n + k}^n \sum_{(n_{is} = n + k + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_{sa} - k_1}^{()}$$

$$\sum_{(n_{sa} = n_{is} + j_{sa} - j_{sa}^{ik} - j_{sa} - j_i)}^{()} \sum_{(n_{ik} = j_{ik} - j_{sa} - s - k_2)}^{()}$$

$$\frac{(n_{ik} - j_{ik} - j_{sa} - s - k_2)!}{(n_i + j_{ik} - n - k_1 - j_{sa}^s)! \cdot (n_i + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq 1 \wedge l_s \leq D - n - 1 \wedge$

$D + l_s + s - l_i + 1 \leq l \leq l - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} - 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 \leq l_s \wedge l_{ik} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D - l_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = k \geq 0 \wedge$

$j_{sa} - j_{sa} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$fzS_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{ik}}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-l_k-1)! \cdot (n_{sa}+j_{sa}-j_i-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{sa}-n_s-1)! \cdot (n_s+n_{sa}-1)!}{(j_s-j_{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_s+s-l}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+\mathbb{k}-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2}} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^{ik})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)! \cdot (n - j_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$(D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n)$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - 1 > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \vee$

$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - 1 > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \vee$

$l_i \leq D + s - n$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$l_i \leq j_i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$\begin{aligned}
 f_z^{\mathcal{S}}_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \\
 &\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=s}^{l_s+s-l} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n-l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 &\sum_{(n_{sa}=n-l_k+1)}^{(n_{ik}+j_{ik}-j_{sa})} \sum_{n_s=n-j_i}^{n_{sa}-j^{sa}-j_i} \\
 &\frac{(n_s - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \\
 &\frac{(n_{is} - j_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} - j_s - n_{ik} - j_{ik})!} \cdot \\
 &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 &\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 &\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 &\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 &\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 &\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 &\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{sa}-l+1)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \frac{(n_{ik}+j_{ik}-l_k) n_{sa}^{j_{sa}-j_i}}{(n_{sa}=j_{sa}+1) n_s=n-j_i} \\
 & \frac{(n_i - n_{sa} - 1)!}{(j_s - 2)! \cdot (n_{sa} + j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{sa} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} + n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENREINER

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=s}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j_s}^{(\cdot)}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_s+1)! \cdot (j_{sa}^s)! \cdot (j_s-s)!}{(l_s-l-1)! \cdot (l_s-j_s-k_1+1)! \cdot (j_s-2)! \cdot (D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge \right.$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_s \wedge$$

$$(D - n) \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^l\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=l-s-j_{sa}}^{l-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa})}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_i-n_{ik}-1)!}{(j_{ik}-j_i-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

GÜLDENYA

$$\begin{aligned}
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
& \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa+s-j_{sa}}}^{l_i-l+1} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_{is}+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{ik}+1}^{n_{is}+j_{ik}-l_{k1}} \\
& \sum_{(n_{sa}=n+l_{sa}+1)}^{(n_{ik}+j_{ik}-l_{k2})} \sum_{(n_{is}=n+l_{is}+1)}^{n_{sa}+j^{sa}} \\
& \frac{(n_{is}-1)! \cdot (n_{is}-j_s+1)!}{(n_{is}-2)! \cdot (n_{is}-j_s+1)!} \cdot \\
& \frac{(n_{ik}-1)!}{(n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \\
& \frac{(n_{ik}-n_{sa}-1)!}{(j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
& \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
& \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
& \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
& \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
& \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
& \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
\end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}^{sa}=j_{sa}^{sa}+1)} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{lk_2})! \cdot (j_{sa}^{lk_2}-j_{sa}^{lk_2})! \cdot (j_s-s)!}{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^{lk_2})! \cdot (j_{sa}^{lk_2}-j_{sa}^{lk_2})! \cdot (l_s-l-1)!}$$

$$\frac{(l_s-j_s-l+1)! \cdot (j_s-2)!}{(D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge \right.$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa}^{sa} + j_{sa}^{lk} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{lk} \wedge j_i + j_{sa} - s \wedge j_{sa}^{sa} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{lk} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa}^{sa} + j_{sa}^{lk} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{lk} \wedge j_i + j_{sa} - s \wedge j_{sa}^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_{sa} \wedge$$

$$(D - n) \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=l-1}^{l_i-l+1} \sum_{(j_i+l+s-j_{sa})}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_{sa})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+k_2-j_{sa})}^{(n_{is}+j_s-n_{ik}-k_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{sa}^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + j_{ik} - k_1}^{n_{is} + j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n + j_{sa} - 1)}^{(n_{ik} + j_{ik} - l - k_2)} \sum_{(n_{sa} + j_{sa} - 1)}^{(n_{sa} + j_{sa} - 1)} \\
 & \frac{(n_{is} - 1)!}{(j_i - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_i - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_i - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j_{sa}+s-1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l-1)!}$$

$$\frac{(l_s-j_s-1)! \cdot (j_s-2)!}{(l_s-j_s-1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D-l_i)!}$$

$$\frac{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$((D \geq n < n \wedge l \neq i \wedge l_i = D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa} - j_{sa}^{ik} \wedge l_i + j_{sa} - s > l_{sa}) \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_{sa} \wedge$$

$$(l_i - s - n)) \wedge$$

$$D \geq n < n \wedge I = \mathbb{K} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{K}_1, j_{sa}^{ik}, \mathbb{K}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)}$$

$$\sum_{(n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{(n_{ik}+j_{ik}-j_{sa}^{lk_2})} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{ik}-n_{ik}-1)!}{(n_{is}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{lk}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{lk}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

GÜLDENYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)}$$

$$\sum_{j_{ik}=j_s + j_{sa}^{ik} - 1}^{()} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_{sa}^{sa} + s - j_{sa}}^{()}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n_{is} + j_s - k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik} - j_s - s - k_2)}^{()} \sum_{j_{sa} - j_i}^{()}$$

$$\frac{(n_{ik} - j_{ik} - j_s - s - k_2)!}{(n_i + j_{ik} - n - k_1 - j_{sa}^s)! \cdot (n_i + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$((D \geq n < n \wedge l_i \neq l_s \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \vee$$

$$(D \geq n < n \wedge l_i \neq l_s \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \wedge$$

$$D \geq n < n \wedge l_i = k \geq 0 \wedge$$

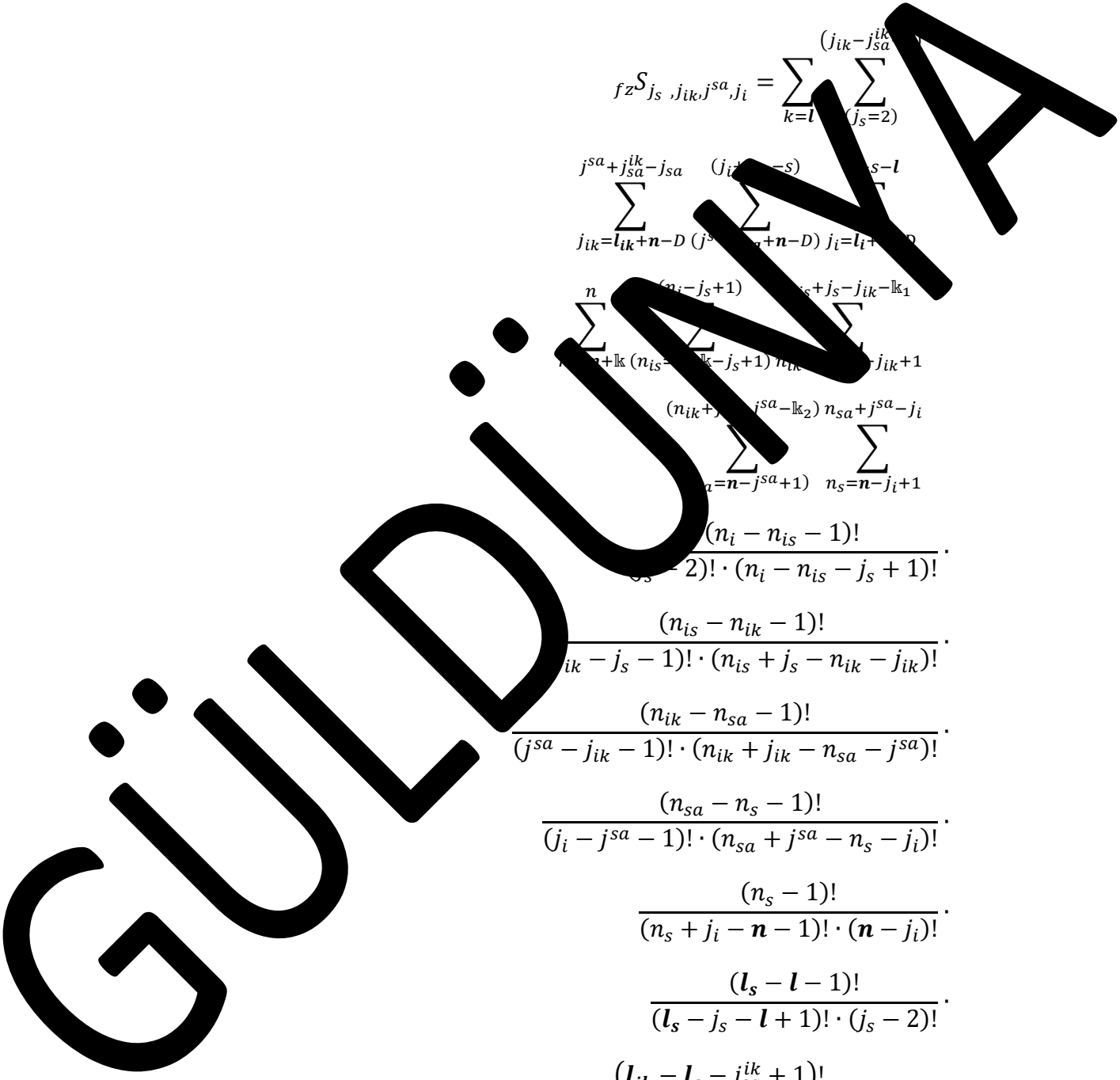
$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_{ik}=l_{ik}+n-D}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{ik}-j_{sa}^{ik})}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_i=l_i+1}^{(j_{ik}-j_{sa}^{ik})} \sum_{(n_{is}=n_{ik}-j_s+1)}^{(n_{is}=n_{ik}-j_s+1)} \sum_{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$



$$\begin{aligned}
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_s - l + 1)} \\
& \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{j^{sa}=l_{sa}}^{(l_{sa}-l+1)} \sum_{j_i=l_s-l+1}^{l_s-l+1} \\
& \sum_{n_i=n+1}^n \sum_{n_{is}=n_{is}+j_s-1}^{(n_i-j_s)} \sum_{n_{ik_2}=n_{ik_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}
\end{aligned}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{(l_s+s=l_i+n-D)}^{l_s+s} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n_{is}+j_s-k_1)}^{(n_{ik}-j_{ik}-j_s-k_2)} \frac{(n_{ik}-j_{ik}-j_s-k_2)!}{(n_i+j_{ik}-n-k_1-j_{sa}^s)! \cdot (j_{sa}^s-j_s-s)!} \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\begin{aligned} & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_i - j_{sa}^{ik} + 1 > l_s \wedge l_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \vee \\ & (D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_i - s + 1 > l_s \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \wedge \\ & D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge \end{aligned}$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_{ik}=l_{ik}+n-D}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa} \geq l_{ik}+n-D)}^{(l_i+n+j_{sa}-s-1)} \sum_{j_i=l_i+1}^{l+1} \sum_{(n_{is}=n_{ik}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_{sa}-\mathbb{k}_2)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}+j_{sa}-j_i)} \sum_{n_s=n-j_i+1}^{(n_i-n_{is}-1)!} \cdot \frac{(n_i-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \frac{(n_{is}-n_{ik}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik})!} \cdot \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j_{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\begin{aligned}
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{j^{sa} + j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D)}^{(l_s + j_{sa} - l)} \sum_{(j_s=l+1)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{n_i=n+l_{ik}}^n \sum_{(n_i - j_s = l_{ik} + 1)}^{(n_i - j_s)} \sum_{(n_{is} + j_s - j_{ik})}^{(n_{is} + j_s - j_{ik})} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa+s-j_{sa}}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_{is}+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{ik}+1}^{n_{is}+j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n+l_{sa}+1)}^{(n_{ik}+j_{ik}-l_{k_2})} \sum_{(n_{sa}+j_{sa})}^{n_{sa}+j_{sa}} \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZYAZ

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(l_s+j_{sa}-l)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik_2}}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{ik_2}-s-l_{k2})!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik_2})! \cdot (n_{ik}+j_{ik}-j_{sa}^{ik_2}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1) \wedge \right.$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + l_{k_1} \wedge$$

$$l_{k_2}: z = 2 \wedge l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j_{sa}=l_{sa}-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+}^n \sum_{(n_i-j_s)}^{(n_i-j_s)} \sum_{(n_i+j_s-j_{ik}+1)}^{(n_i+j_s-j_{ik}+1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_{i_{sa}+s}-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k}^{n_{is}+j_s-l_k-1} \\
 & \sum_{(j_{sa}=n-j_i+1)}^{(n_{ik}+j_{ik}-l_k-1)} \sum_{(j_{sa}=n-j_i+1)}^{(n_{sa}+j_{sa}-j_{sa}^{ik})} \\
 & \frac{(n_{is} - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^{ik})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{sa}^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1 + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + j_{ik} - k_1}^{n_{is} + j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n + j_{sa} - k_2 + 1)}^{(n_{ik} + j_{ik} - k_2 - k_1)} \sum_{(n_{sa} + j_{sa} - k_2)}^{(n_{sa} + j_{sa} - k_2)} \\
 & \frac{(n_{is} - 1)!}{(j_i - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{ik} - 1)!}{(j_i - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \cdot \frac{(n_{sa} - 1)!}{(j_i - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_s+j_{sa}^{lk}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j_{sa}+s-1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}{(l_s-l-1)!} \cdot \frac{(l_s-j_s-1)! \cdot (j_s-2)!}{(D-l_i)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\begin{aligned} & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{lk} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_{ik} - j_{sa}^{lk} + 1 > l_{sa} + j_{sa} - j_s \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \vee \\ & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{lk} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_{ik} - j_{sa}^{lk} + 1 > l_{sa} + j_{sa} - j_s \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1)) \wedge \\ & D \geq n < n \wedge l = l \geq 0 \wedge \\ & j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{lk} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{lk} - 1 \wedge \end{aligned}$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z \mathcal{S}_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_{sa}=n-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+1}^n \sum_{(n_i-j_{sa}+1)}^{(n_i-j_{sa})} \sum_{n_{is}+j_s}^{n_{is}+j_s+k_1}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{sa}^{sa} = j_{sa} - j_{sa}^{ik}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + j_{ik} - k_1}^{n_{is} + j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n + j_{sa} - 1)}^{(n_{ik} + j_{ik} - k_2 - k_1)} \sum_{(n_{sa} + j_{sa} - 1)}^{(n_{sa} + j_{sa} - 1)} \\
 & \frac{(n_{is} - 1)!}{(n_{is} - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{ik} - 1)!}{(n_{is} + j_s - n_{ik} - j_{ik})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}^{ik}}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-k_2)}^{()} \sum_{n_s=n_{sa}+j_s}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa}^{ik})!}{(n_{ik}-j_{ik}-n-k_2-j_{sa}^{ik})! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$((D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1) \vee$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{ik} + 1 > l_s \wedge l_{ik} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \vee$$

$$(D > n \leq n \wedge l = i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l_s}^{(l_s-l+1)} \sum_{j_s=2}^{(l_s-l+1)} \sum_{j_{ik}=l_{ik}-l+1}^{(l_{ik}-l+1)} \sum_{j_{sa}=l_{sa}-D}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{(l_i+n-D)} \sum_{n_i=n-j_{ik}+\mathbb{k}_1}^{(n-j_{ik}+\mathbb{k}_1)} \sum_{n_{is}=n+\mathbb{k}_2-1}^{(n+\mathbb{k}_2-1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{(n+\mathbb{k}_2-j_{ik}+1)} \sum_{a=n-j_{sa}+1}^{(n-j_{sa}+1)} \sum_{n_s=n-j_i+1}^{(n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}^{ik}-1)} \sum_{(j_i=j_s+j_{sa}^{ik}-j_{sa})}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_s-j_{ik}-k_1)}$$

$$\sum_{(n_{sa}+j_{ik}-j_s)}^{(n_s=n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{sa} + j_{sa} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_i \leq D + s - 1 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - k_1 + 1 = j_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_i \leq j_i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{\binom{()}{j_s=1}} \sum_{j_i=1}^{\binom{()}{l_i-l+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{\binom{()}{j^{sa}=j_{sa}}} \sum_{j_i=1}^{\binom{()}{l_i-l+1}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}+1)}^{\binom{()}{n_i-j_{ik}-l_{k_1}+1}}$$

$$\frac{n_{ik}+j_{ik}-j_{sa}}{n_{sa}=n_i+1} \frac{\binom{()}{n_{sa}-j_i}}{\binom{()}{n_s=n-j_i}}$$

$$\frac{(j_{ik}-1)! \cdot (n_i-j_{ik}-l_{k_1}+1)!}{(n_{ik}-1)! \cdot (n_{sa}-j_{sa})!}$$

$$\frac{(n_{ik}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_s-n_s-1)!}{(j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(l_i+j_{sa}-j_i-l_{sa})! \cdot (j_i-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

GÜLDENYA

$$\sum_{k=i}^{\binom{()}{j_s=1}} \sum_{j_i=1}^{\binom{()}{l_i-l+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{\binom{()}{j^{sa}=j_{sa}}} \sum_{j_i=1}^{\binom{()}{l_i-l+1}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{\binom{()}{n_i-j_{ik}-l_{k_1}+1}}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{\binom{()}{n_s=n_{sa}+j^{sa}-j_i}} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < l = l_i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n$$

$$l_i - s + 1 > l_s \wedge$$

$$l_i \leq D + s - n \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1} \sum_{\binom{()}{j_s=1}}^{l_i - l + 1}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{\binom{()}{j^{sa}=j_{sa}}} \sum_{j_i=l_i+n-D}^{l_i - l + 1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i - j_{ik} - \mathbb{k}_1 + 1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_i + j_{sa} - l_s - s)!}{(l_i + j_{sa} - j_i - l_{sa})! \cdot (j_i - s)!}$$

$$\frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (j_i)!}$$

$$\sum_{j_{ik}=j_{sa}}^n \sum_{j_s=1}^{(j_i)}$$

$$\sum_{j_{ik}=j_{sa}}^n \sum_{j_s=1}^{(j_i)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{(j_i)}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(j_i)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j^{sa})! \cdot (n - s)!}$$

$$\frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D > n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_i - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{()} \sum_{j_{sa}=1}^{()} \sum_{j_{ik}=j_{sa}^{ik} (j_{sa}=j_{sa})}^{()} \sum_{j_i=s}^{l_i - i + 1} \frac{(n_i - j_{ik} - k_1)!}{(j_{ik} - 1)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_i - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik})! \cdot (j_{sa} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=1}^{()} \sum_{j_{sa}=1}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik} (j_{sa}=j_{sa})}^{()} \sum_{j_i=s}^{()}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{(\cdot)}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(\cdot)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n - s)!}$$

$$\frac{(D - l_i)}{(D + s - l_i)! (n - s)!}$$

$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + \dots \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i - j_{sa} \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$

$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1 \leq j_{sa} - 1$

$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}\} \wedge$

$s \geq 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_2: z \geq 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^i \sum_{(j_s=1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{(l_{sa}-i+1)} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\begin{aligned}
& \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik})! \cdot (j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=i}^{\binom{D}{l_i}} \sum_{j_s=1}^{\binom{D}{l_i}} \\
& \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{\binom{D}{l_i}} \sum_{j_i=s} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{\binom{D}{l_i}} \\
& \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{\binom{D}{l_i}} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}
\end{aligned}$$

$$j_s \geq n - l_i \wedge l = l_i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

GÜLDÜNKAYA

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(\cdot)} \sum_{(j_s=1)}^{(\cdot)}$$

$$j_{ik}=j \quad \sum_{(j_{sa}=j_i-s)}^{(\cdot)} \sum_{j_i=s}^{(\cdot)}$$

$$n_i=n \quad \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(\cdot)}$$

$$n_{sa}+j_{ik}-j_{sa}-\mathbb{k}_2 \quad \sum_{(n_{sa}+j_{sa}-j_i)}^{(\cdot)}$$

$$\sum_{sa=n-j_{sa}+1}^{(\cdot)} \sum_{(n_s=n-j_i+1)}^{(\cdot)}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=1}^{(\cdot)} \sum_{(j_s=1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=s} \sum_{n_i=n+l_k} \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{ik}+j^{sa}-j_i)} \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})!}{(n_{ik}+j_{ik}-n_{ik}-l_{k_2}-j_{sa})! \cdot (n-s)!} \cdot \frac{(D-l_i)!}{(D+l_s-n-l_i)! \cdot (n-s)!}$$

$$D \geq n < n \wedge l = l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} - j_{sa} \leq j_i \leq$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = l \geq 0$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{ik}^{ik} = j_{sa} - 1 \wedge j_{sa} = j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^{s-1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{s-1}, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + 1 \wedge$$

$$l_{k_2}: 2 \wedge l_{k_2} = l_{k_1} + 1 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1} \sum_{(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k} \sum_{(n_{ik}=n+l_k-j_{ik}+1)}^{(n_i-j_{ik}-l_{k_1}+1)}$$

$$\begin{aligned}
 & \sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\
 & \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa} + 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l_s - j_{ik} + 1)!}{(l_{ik} - j_{ik} - l_s - 1)! \cdot (n_{ik} - j_{sa}^{ik})!} \cdot \\
 & \frac{(D - l_i)!}{(n + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=i}^{()} \sum_{(j_s=1)}^{()} \\
 & \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i=s} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{()} \\
 & \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}
 \end{aligned}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_i} = \sum_{k=1}^{\mathbb{k}} \sum_{l=1}^{\mathbb{k}} \binom{S}{j_s, j_{ik}, j_i}$$

$$l_{ik} - i^{l+1} \sum_{j_{ik}=j_{sa}^{ik}} \binom{l}{j_{ik}} \sum_{j_i=j_{sa}^{ik}} \binom{l}{j_i} \sum_{j_i=j_{sa}^{ik}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)}$$

$$\sum_{n_{sa}=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜNKYA

$$\sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{()} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i}^{()}$$

$$\sum_{n_i=n+l}^n \sum_{(n_{ik}=n_i-l-k_1+1)}^{()}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}}^{()} \sum_{(n_s=n_{sa}+j^{sa})}^{()}$$

$$\frac{(j_s - l - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j^{sa})! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_s \leq j^{sa} - j_{sa}^{ik} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik} \wedge l_{ik} - j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa} = j_{sa} - j_s \wedge j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^i, j_{sa}^{ik}, k_2, j_{sa}, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = k_1 + k_2 \wedge$$

$$k_2: k_1 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{(l_{sa} - i^{l+1})} \sum_{(j^{sa}=j_{sa})}^{l_i - i^{l+1}} \sum_{j_i=s}$$

$$\begin{aligned}
 & \sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_{ik} = n + \mathbb{k}_1 - j_{ik} + 1)}^{(n_i - j_{ik} - \mathbb{k}_1 + 1)} \\
 & \sum_{n_{sa} = n - j^{sa} + 1}^{n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2} \sum_{(n_s = n - j_i + 1)}^{(n_{sa} + j^{sa} - j_i)} \\
 & \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} - j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - j_i - n - j_i)!}{(n_s - j_i - n - j_i)!} \\
 & \frac{(l_{sa} + j^{sa} - l_{ik} - j_{sa})!}{(l_{sa} + j^{sa} - l_{ik})! \cdot (j^{sa} - j_{sa})!} \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(l_{sa} + l_i - j_i - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \\
 & \sum_{k=i}^{\binom{D}{k}} \sum_{(j_s=1)}^{\binom{D}{j_s}} \\
 & \sum_{j_{ik} = j_{sa}^{ik}} \sum_{(j^{sa} = j_{sa})}^{\binom{D}{j^{sa}}} \sum_{j_i = s}^{\binom{D}{j_i}} \\
 & \sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_{ik} = n_i - j_{ik} - \mathbb{k}_1 + 1)}^{\binom{D}{n_{ik}}} \\
 & \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}^{\binom{D}{n_{sa}}} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = {}_i l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} j_{ik} - j_{sa}^{ik} + 1 &= \sum_{k=i}^{\infty} \sum_{j_s=1}^{(\cdot)} \\ &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-i+1)} \sum_{(j^{sa}=j_{sa})} l_{i-i+1} \sum_{j_i=s} \\ &\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)} \\ &\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\ &\frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \end{aligned}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=1}^{(j_s)} \sum_{j_{ik}=j_s} \sum_{j_{sa}=j_{sa}} \sum_{j_i=s} \sum_{n_i=n}^n \sum_{j_{sa}=n_{ik}+j_{sa}-j^{sa}-k_2}^{(n_s=n_{sa}+j^{sa}-j_i)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = l \wedge l_i \leq l + s < n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ls} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k \geq 0 \wedge$$

$$j_s = j_s - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fzS_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{\dots} \sum_{(j_s=1)}^{(\dots)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{l_{ik}-i+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\dots)} \sum_{j_i=j^{sa}+s}^{l_i-i+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n-i+1)}^{(n_i-j_{ik}-l_{k_1}+1)}$$

$$\sum_{n_{sa}=n-i+1}^{n_{ik}+j_{ik}-j} \sum_{(n_s=n-j_i+1)}^{(j^{sa}-j_i)}$$

$$\frac{(n_{ik}-1)!}{(j_{ik}-1)! \cdot (n_i-j_{ik}-1)!}$$

$$\frac{(n_{ik}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_s-1)!}{(j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(l_{ik}-j_{ik}-l_s+1)! \cdot (j_{ik}-j_{sa}^{ik})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=i}^{\dots} \sum_{(j_s=1)}^{(\dots)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=s}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{(\cdot)}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(\cdot)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s) \cdot (n - s)!}$$

$$\frac{(D - l_i)}{(D + s - l_i)! (n - s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + \dots \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i - j_{sa} \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D \geq n < n \wedge l = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z \geq 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^l \sum_{(j_s=1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{l_{ik}-i+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=s}^{l_i-i+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\begin{aligned}
& \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{sa} - j_{sa}^{ik})!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{sa} - j_{sa}^{ik})!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - 1)! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=i}^{\infty} \sum_{j_s=1}^{(\cdot)} \\
& \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{(\cdot)} \sum_{j_i=s} \\
& \sum_{n_i=n+k}^n \sum_{(n_{ik}=n_i - j_{ik} - k_1 + 1)}^{(\cdot)} \\
& \sum_{n_{sa}=n_{ik} + j_{ik} - j^{sa} - k_2} \sum_{(n_s=n_{sa} + j^{sa} - j_i)}^{(\cdot)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}
\end{aligned}$$

$$D \geq n < n \wedge l = \sum_i l_i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} \geq 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} & f z^s j_{sa}^{i k} j_{sa}^{s i} j_{sa}^{i l} \\ & \sum_{k=1}^{\binom{()}{k}} \sum_{l=1}^{\binom{()}{l}} \\ & l_{ik} - i l + \binom{l_{sa} - i l + 1}{j_{sa}^{ik}} \binom{l_{sa} - i l + 1}{(j_{sa}^{ik} + j_{sa} - j_{sa}^{ik})} \binom{s - j_{sa}}{s - j_{sa}} \\ & \sum_{i=n+\mathbb{k}}^{(n_i - j_{ik} - \mathbb{k}_1 + 1)} \sum_{(n_{ik} = n + \mathbb{k} - j_{ik} + 1)}^{(n_i - j_{ik} - \mathbb{k}_1 + 1)} \\ & \sum_{n_{sa} = n - j_{sa} - \mathbb{k}_2}^{(n_{sa} + j_{sa} - j_i)} \sum_{(n_s = n - j_i + 1)}^{(n_{sa} + j_{sa} - j_i)} \\ & \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \\ & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\ & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\ & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\ & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \cdot \\ & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa}^{ik} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\ & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \end{aligned}$$

$$\sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{()} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i}^{()}$$

$$\sum_{n_i=n+l}^n \sum_{(n_{ik}=n_i-l-k_1+1)}^{()}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}}^{()} \sum_{(n_s=n_{sa}+j^{sa})}^{()}$$

$$\frac{(j_{ik} + j_{sa} - j_{sa}^{ik} - l - k_2)!}{(n - k_2 - j^{sa} - l - k_2)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_s \leq j_{sa}^{ik} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_{sa} - j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^{ik}, j_{sa}^{ik}, k_2, j_{sa}, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge s = k_1 + k_2 \wedge$$

$$k_2: k_1 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$l_{ik} - l_{i+1} (l_{sa} - l_{i+1}) l_{i- l_{i+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=s}$$

$$\begin{aligned}
 & \sum_{n_i = n + k}^n \sum_{(n_{ik} = n + k - j_{ik} + 1)}^{(n_i - j_{ik} - k_1 + 1)} \\
 & \sum_{n_{sa} = n - j^{sa} + 1}^{n_{ik} + j_{ik} - j^{sa} - k_2} \sum_{(n_s = n - j_i + 1)}^{(n_{sa} + j^{sa} - j_i)} \\
 & \frac{(n_i - n_{ik} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} - j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - j_i - n - j_i)!}{(n_s - j_i - n - j_i)!} \\
 & \frac{(l_{ik} - j_{sa} - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{sa} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} - j_{sa} - j_{sa}^{ik} - j_{sa})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \\
 & \sum_{k=1}^{()} \sum_{l=1}^{()} \\
 & \sum_{j_{ik} = j_{sa}^{ik}} \sum_{(j^{sa} = j_{sa})}^{()} \sum_{j_i = s} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{ik} = n_i - j_{ik} - k_1 + 1)}^{()} \\
 & \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}^{()}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!}$$

$$\frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

GÜLDÜNYA

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{j_s, j_{ik}, j_{sa}^{ik}} &= \sum_{k=1}^{\mathbb{k}} \binom{(\cdot)}{(j_s = j_{ik} - j_{sa}^{ik} + 1)} \\ &\sum_{j_{ik} = j_{sa} + j_{sa}^{ik} - j_{sa}}^{j_i + j_{sa} - l_{sa} + j_{sa} - l - s + 1} \sum_{k = j_{sa} + 1} \sum_{j_i = s + 1} \\ &\sum_{i = n + \mathbb{k}}^n \sum_{(n_i = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\ &\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\ &\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_s)} \sum_{(j_{sa}=j_{sa}+1)}^{(l_{sa}+1)} \sum_{(l_{sa}+j_{sa}-l-s+2)}^{(j_{ik}=j^{sa}+j_{sa}^{ik})} \sum_{(j^{sa}=j_{sa}+1)}^{(j^{sa})} \sum_{(n_i=n-j_i)}^{(n)} \sum_{(n_{is}=n+l_{k_1}+1)}^{(n_i-j_s)} \sum_{(n_{ik}=n+l_{k_2}-j_{ik}+1)}^{(n_{is}-j_{ik}-l_{k_1})} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=s+1}^{l_{sa}+j_{sa}-l-s+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ls}}$$

$$\frac{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (j_{sa}-j_s-s)!}{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (j_{sa}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ls} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{lk} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{k_1} - j_{sa}^{lk} + 1 = l_{sa} + j_{sa}^{lk} - j_{sa} \wedge l_{k_1} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_{k_1} + 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ls} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s^s, \dots, l_{k_1}, j_{sa}^{ls}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + l_{k_1} \wedge$$

$$z = 2 \wedge l_{k_1} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} l_{ik}+j_{sa}^{ik}-l-s+1 \sum_{j_i=s+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_i+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{j_i=l_{ik}+j_{sa}^{ik}-l-s+2}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_i + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{()} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{()} \sum_{j_i = s + 1}^{l_{ik} + j_{sa}^{ik} - l - s + 1} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} \sum_{j_i=1}^{j_i} j_i &= \sum_{k=1}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\ &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_s+s-l} \sum_{j_i=s+1}^{l_s+s-l} \\ &\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\ &\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \end{aligned}$$

$$\begin{aligned}
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{l_i!}{(D + j_i - n - l_i)! \cdot (j_i)!} + \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_{is}+1)} \sum_{(j^{sa}=j_{sa}^{ik}+1)}^{(j_s - j_{sa}^{ik} + 1)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k2}) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(\cdot)} \sum_{(j^{sa} - s)}^{(\cdot)} \sum_{l_s = s - l}^{l_s + s - l}$$

$$\sum_{n_i = n + k}^n \sum_{(n_i - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = \dots}^{n_{ik} = \dots + j_s - j_{ik} - k_1}$$

$$\sum_{(n_{sa} = \dots + j_{ik} - j^{sa})}^{(\cdot)} \sum_{n_s = n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - \dots - s - k_2)!}{(\dots + j_{ik} - \dots - k_2 - \dots)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_i = D + s - \dots \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + \dots \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - \dots \leq j^{sa} \leq \dots + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - \dots + 1 = l_s - \dots + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$\dots \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_2: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fzS_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-l_k-1)! \cdot (n_{sa}+j_{sa}-j_i-1)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{sa}-j_{sa}+1)!}$$

$$\frac{(n_{sa}-n_s-1)!}{(n_{sa}+j^{sa}-n_s-j_i)! \cdot (n_s-j_i-1)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_s^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_i \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = \mathbb{k}_1 + \mathbb{k}_2 \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_{is} + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{(j^{sa}=j_{sa}+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{j_i = j^{sa} + j_{sa}^{ik} - j_{sa}} \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)} \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = j_{sa} + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (j_i)!}$$

$$\sum_{j_s = j^{sa} - j^{ik} + 1}^{(j_s)}$$

$$\sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_s}^{(j_{ik} + j_{sa} - l)} \sum_{(j^{sa} = j_{sa} - 1)} \sum_{j_i = j^{sa} + s - j_{sa}}$$

$$\sum_{j_s = n + k}^{(n_i - j_s - 1)} \sum_{(n_{is} = n + k - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1}$$

$$\sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2)}^{(j_s)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq l_i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s - \dots - j_{sa}^{ik} + 1)}^{(\cdot)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{l_{sa} + j_{sa}^{ik} - l - j_{sa} + 1} \sum_{(j^{sa} = j_{ik} + \dots - j_{sa}^{ik})}^{(\cdot)} \sum_{j_i = j^{sa} + \dots}^{l_i + 1}$$

$$\sum_{n_i = \dots + \mathbb{k}}^n \sum_{(n_{is} = \dots - j_s + 1)}^{(j_s - j_s + 1)} \sum_{n_{ik} = \dots - j_{ik} - \mathbb{k}_1}^{(j_s - j_{ik} - \mathbb{k}_1)}$$

$$\sum_{n_{sa} = n - j^{sa} + 1}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{(n_{sa} + j^{sa} - j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

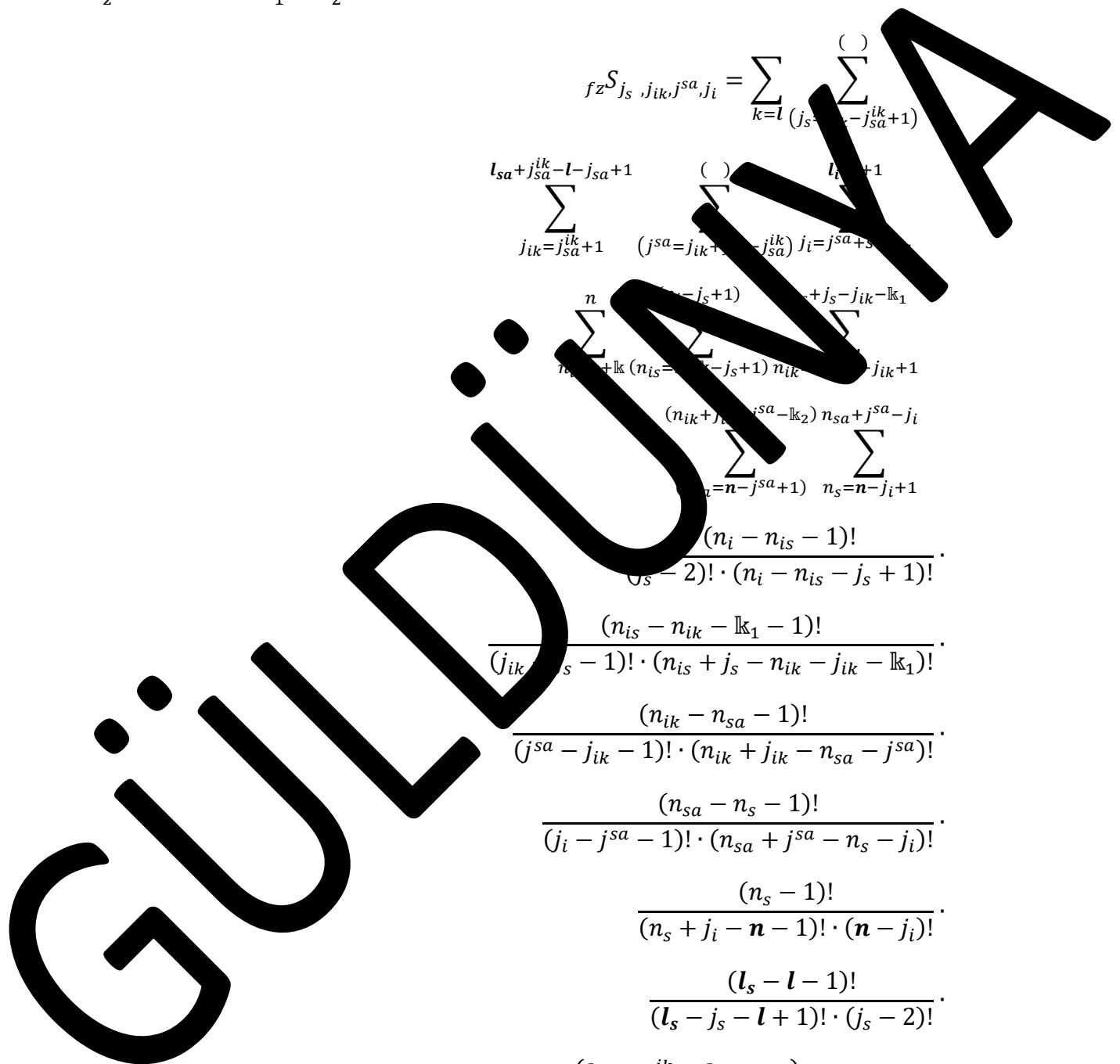
$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$



$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j_{sa}+s-1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n_{is}-j_s)! \cdot (n_{sa}-j_{sa}^{ik})! \cdot (n_{ik}-l_{k_1})! \cdot (n_{sa}+j_{sa}^{ik})! \cdot (n_{is}+j_{ik}-l_{k_1}-j_s-1)! \cdot (j_s-2)!}{(D-l_i)! \cdot (D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq l_i \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq l < n \wedge l = l_{k_1} \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s^s, l_{k_1}, j_{sa}^{ik}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = l_{k_1} + l_{k_2} \wedge$$

$$l_{k_2} = l_{k_1} \wedge l_{k_1} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+lk_2-j_{ik}-lk_1}^{n_{is}+j_s-j_{ik}-lk_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-lk_2)} \sum_{(n_{sa}+j^{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-lk_1-1)!}{(j_{ik}-j_s-1)!(n_{is}-n_{ik}-j_{ik}-lk_1)!} \cdot \\
 & \frac{(n_{ik} \cdot n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{is}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-lk_1}$$

GÜLDENWA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq j_{ik} \wedge l_i + j_s - s > l_s \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{l_s + j_{sa}^{lk}} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}^{(j_s = j_{sa} + s - j_{sa})} \sum_{(j_s = j_{sa} + s - j_{sa})}^{(j_s = j_{sa} + s - j_{sa})} \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1}^{(n_i - j_s + 1)} \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(j_s = j_{sa} + s - j_{sa})} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(j_s = j_{sa} + s - j_{sa})} \cdot \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z = \sum_{i_k=j_s+j_{sa}^{ik}-1}^n \sum_{i_s=n+k}^{(n_{i_s}=n+k-j_s+1)} \sum_{i_{ik}=n+k_2-j_{ik}+1}^{(n_{i_{ik}}=n+k_2-j_{ik}+1)} \sum_{i_{sa}=n-j_{sa}+1}^{(n_{i_{sa}}=n-j_{sa}+1)} \sum_{i_i=j_{sa}+s-j_{sa}}^{(n_{i_i}=n-j_{sa}+s-j_{sa}+1)} \frac{(l_{sa}-l-j_{sa}+1)!}{(j_s-2)! \cdot (n_i-n_{i_s}-j_s+1)!} \cdot \frac{(n_{i_s}-n_{i_{ik}}-k_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{i_s}+j_s-n_{i_{ik}}-j_{ik}-k_1)!} \cdot \frac{(n_{i_{ik}}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{i_{ik}}+j_{ik}-n_{sa}-j^{sa})!} \cdot \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_{sa}-l-j_{sa}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}-j_s)} \sum_{(j_s=j_{sa}-j_{sa})}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_s-j_{ik}-k_1)}$$

$$\sum_{(n_{sa}+j_{ik}-j_s)}^{(n_{sa}+j_{ik}-j_s)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{sa} + j_{sa} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l = l \wedge l_i = D + s - l$$

$$1 \leq j_{ik} - j_{sa}^{ik} + j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - k_1 + 1 = j_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fzS_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}^{(l_{ik}-l-j_{sa}^{ik}+2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_i-l+1)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+l_k-j_{ik}+1)}^{(n_{is}+j_s-j_{ik}-l_{k_1})}$$

$$\frac{(n_{ik}+j_{ik}-n_{sa}-j^{sa}-j_i)!}{(n_{sa}=n+l_k-j_s+1)! \cdot (n_s=n-l_j)^!}$$

$$\frac{(n_i-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}+j_s-j_{ik}-l_{k_1}-1)!}$$

$$\frac{(n_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-l_{k_1}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(n_{sa}-n_s-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}^{(l_{ik}-l-j_{sa}^{ik}+2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{ik}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_{sa} + j_{sa} - s > 0 \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}^i, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = \mathbb{k} + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_i + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = 2)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=l_i+n-D}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\begin{aligned}
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l - 1)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l - 1)!} \cdot \\
 & \frac{(n - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \sum_{l=1}^{\infty} \sum_{j_s=j_{ik}-j_{sa}+1}^{\infty} \sum_{j_i=l_{sa}+s-l-j_{sa}+2}^{l_i-l+1} \sum_{n_i=n+l_k}^n \sum_{n_{is}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \frac{(n_{ik} + j_{ik} - j^{sa} - l_{k_2})! \cdot (n_{sa} + j^{sa} - j_i)!}{(n_{sa} - n - j^{sa} + 1)! \cdot (n_s - n - j_i + 1)!} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜMÜŞA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{()} \sum_{(j_s=j_s^{sa}+1)}^{()} \sum_{(j_i=l_i+n-D)}^{()} \sum_{(j^{sa}=j_i+j_{sa})}^{()} \sum_{(n_i=n+l_k)}^{()} \sum_{(n_i=n+l_k-j_{sa})}^{()} \sum_{(n_{ik}=n_{is}+j_s-j_{ik}-k_1)}^{()} \sum_{(n_{sa}=n_{ik}+j_s-j_{sa}-k_2)}^{()} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{()} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa})! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=n-D}^{l_{ik}+s-l-j_{sa}^{ik}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{is}+j_s-j_{sa}^{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}-} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{is}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_i+n-D}^{l_{ik}+s-l-j_{sa}^{ik}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_i \wedge j_{sa} - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j_i+j_{sa}-s)} \sum_{(j^{sa}=j_{sa}+1)}^{l_s+s-l} \sum_{j_i=l_i+n-D}^{n} \sum_{n_i=n+\mathbb{k}}^{(n_i-j_s+1)} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + \dots - n - 1)!}{(n_s + \dots - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + \dots - l_{sa})!}{(j^{sa} + l_i + \dots - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D + \dots - l_i)!}{(D + \dots - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa} = j_{sa} + 1)}^{(l_s + j_{sa} - l)} \sum_{j_i = l_s + s - l + 1}^{l_i - l + 1} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (j_i)!} \cdot \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}}^{(j_s - j^{sa} + 1)} \sum_{j_i=l_i+n-D}^{(l_s+s-l)} \sum_{j_i=n+l_k}^{(n_i - j_i - 1)} \sum_{n_{ik}=n_{is}+j_s - j_{ik} - l_{k_1}}^{(n_{is}=n+l_k - j_s + 1)} \sum_{(n_{sa}=n_{ik}+j_{ik} - j^{sa} - l_{k_2})}^{(n_{sa}=n_{sa}+j^{sa} - j_i)} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{(j_s=j_{ik}, j_{sa}^{ik}+1)} \sum_{(l_i+l_{sa}-D-s-1)} \sum_{(j_i=l_i+n-D)} \sum_{(j_{ik}=j_{sa}+j_{sa}^{ik})} \sum_{(j_{sa}=j_{sa}+j_{sa}^{ik})} \sum_{(j_i=l_i+n-D)} \sum_{(j_{ik}=l_{ik}-\mathbb{k}_1)} \sum_{(n_i=n+l_{sa}-j_{sa}+1)} \sum_{(n_{is}=n+\mathbb{k}_1-j_{sa}+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)} \sum_{(n_{sa}+j_{sa}-j_i)} \sum_{(j_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

GÜLDÜNYA

$$\begin{aligned}
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \\
 & \sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \frac{(n_{ik}+j_{ik}-l_k) \cdot n_{sa}^{(j_{sa}-j_i)} \cdot (n_{sa}-j_{sa}+1)}{(n_{sa}=n+l_k+1) \cdot n_s=n-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \\
 & \frac{(n_{ik} \cdot n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_{sa} - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \\
 & \sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{sa}}^{()}
 \end{aligned}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$

$D + s - n < l_i \leq D + l_s + j_i - n - 1$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \dots, \mathbb{k}_1 - j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$

$$fz S_{j_s, j_{ik} j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_i+n+j_{sa}-D-s-1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + l_i - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^k+1)}^{()} \\
 & \sum_{(j_{ik}=j^{sa}+j_i-j_{sa})}^{()} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{()} \sum_{(j_i=j^{sa}+s-j_{sa})}^{()} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$S_{j_s, j_{ik}, j_i} = \sum_{k=l}^{()} \sum_{j_{ik}=j_{sa}^{ik}-j_{sa}}^{n} \sum_{j_i=j_{sa}^{ik}-j_{sa}}^{n+j_{sa}-s-1} \sum_{a=j_{sa}+1}^{l_i-l+1} \sum_{j_i=l_i+n-D}^{n} \sum_{i=n+\mathbb{k}}^{n} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_{sa}=n-j^{sa}+1)}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_s)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+l-1)} \sum_{(j_{sa}=l_i+n+j_{sa}-l)}^{(j_s)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_s)} \\
 & \sum_{n_i=n}^n \sum_{n_{is}=n+l_{k_1}+1}^{j_i-j_s} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}-j_{ik}-l_{k_1}} \\
 & \sum_{a=n-j^{sa}+1}^{j_{ik}+j_{ik}-j_{sa}-l_{k_2}} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{ik}}^{()}$$

$$\sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-lk_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-lk_2) \cdot (j_{sa}^s)! \cdot (j_s-s)!}{(n_{ik}+j_{ik}-n-lk_2)! \cdot (j_{sa}^s)! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq n + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{lk_2} \leq j_{sa}^{lk_2} \leq j_i + j_{sa} - s \wedge j_{sa}^{lk_2} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_i \leq D - l_s + s - j_{sa}^{lk} - 1 \wedge$$

$$\geq n < n \wedge l = lk > 0 \wedge$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{lk}, lk_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$j_{sa}^{lk} > 4 \wedge s + lk \wedge$$

$$lk_2: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_i+n+j_{sa}^{lk}-D-s-1} \binom{(\quad)}{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_{sa}+j_{sa}^{lk}-l-j_{sa}+1} \binom{(\quad)}{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\quad)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$

$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$

$D \geq n < n \wedge l = k > 0 \wedge$

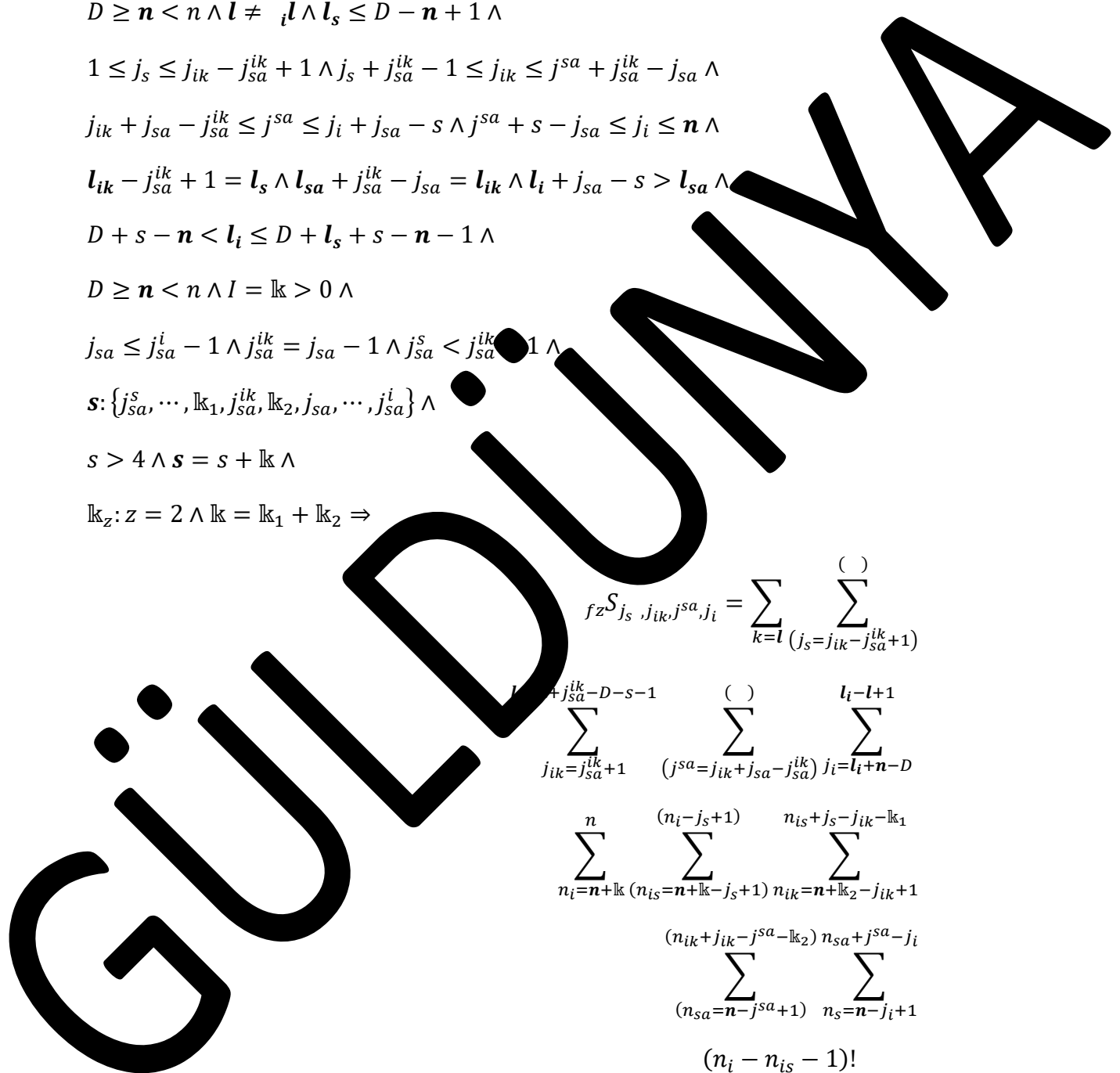
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$\begin{aligned} f_z S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(\quad)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\quad)} \\ &\sum_{j_{ik} = j_{sa}^{ik} + 1}^{l + j_{sa}^{ik} - D - s - 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(\quad)} \sum_{j_i = l_i + n - D}^{l_i - l + 1} \\ &\sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - k_1} \\ &\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \end{aligned}$$



$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l - 1)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l - 1)!}$$

$$\frac{(l_i - l)!}{(n - l)! \cdot (n - j_i)!}$$

$$\sum_{l=1}^{j_s} \sum_{j_s=j_{ik}-j_{sa}+1}^{j_s}$$

$$\sum_{j_{ik}=n+j_{sa}^{l-1}}^{n+l-1} \sum_{j_{ik}+j_{sa}-j_{sa}^{l-1}}^{n+l-1} \sum_{j_i=j^{sa}+s-j_{sa}^{l-1}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_1}^n \sum_{(n_{is}=n+l_1-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

GÜLDÜMÜŞA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{sa}+1)}^{(j_{sa}+1)} \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-(j_{sa}=j_{ik}+j_{sa}-j_i)}^{l_{ik}-l+1} \sum_{(j_s=j_{sa}+1)}^{(j_{sa}+1)} \sum_{(n_{sa}=n_{ik}+j_{sa}-j_s)}^{(j_s+1)} \sum_{(n_{sa}=n_{ik}+j_{sa}-j_s)}^{(j_s+1)} \sum_{(n_{ik}=n_{is}+j_s-j_{ik}-k_1)}^{(j_s+1)} \sum_{(n_{sa}=n_{ik}+j_{sa}-j_s-k_2)}^{(j_s+1)} \sum_{(n_s=n_{sa}+j_{sa}-j_i)}^{(j_s+1)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa})! \cdot (n + j_{sa} - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\quad)} \sum_{l_i+l+1}^{l_i+n-D}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i-j_s+1)}^{(n_i+j_s-n-\mathbb{k}_1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_s+2)! \cdot (n_{ik}-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-j_s+1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_s + j_{sa}^{lk} - l} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_i}^{n_{is} + j_s - j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{(n - j_i + 1)}^{n_{sa} + j^{sa} - 1} \\
 & \frac{(n_i - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - 1)!} \cdot \\
 & \frac{(n_i - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_i - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{sa} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}^{()}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_s + j_{sa}^{lk} - l} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}}^{()} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1}^{()}
 \end{aligned}$$

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{(n_s=n_{sa}+j^{sa}-j_i)} \binom{(\quad)}{\quad} (n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i \wedge l_i + j_s - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_s\} \wedge$$

$$s > 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz^{S_{j_s, j_{ik}, j^{sa}, j_i}} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \binom{(\quad)}{\quad} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + \dots - n - 1)!}{(n_s + \dots - j_i)!} \cdot \\
 & \frac{(j_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + \dots - l_{sa})!}{(j^{sa} + l_i + \dots - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D + \dots - l_i)!}{(D + \dots - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=1}^{(l_{sa} - l - j_{sa} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{lk} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})} \sum_{j_i = j^{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1)}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{(n_s = n - j_i + 1)}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{i=0}^{(l_{sa}-l-j_{sa}+s)} \sum_{k=0}^{(D-s+1)} \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(j_{ik}+j_{sa}-j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_i-j_{sa}-1)} \sum_{i=n+l_k}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{ik}+j_{ik}-j_s-s-l_{k_2})!} \cdot \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < l \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{n-D-s} \sum_{i=2}^{n-D-s} \sum_{j_{ik}=j_s+j_{sa}^{ik}}^{n-j_s+j_{sa}^{ik}} \sum_{j_i=l_i+n-D}^{n-j_s+j_{sa}^{ik}} \sum_{n_i=n+j_{sa}^{ik}-1}^{n-j_s+j_{sa}^{ik}} \sum_{n_{is}=n+\mathbb{k}_1-1}^{n-j_s+j_{sa}^{ik}} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n-j_s+j_{sa}^{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\begin{aligned}
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_i=j_{sa}+s-j_{sa})} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+l_k-j_{ik}+1)}^{(n_{is}+j_s-j_{ik}-l_{k_1})} \\
 & \sum_{(n_{sa}=n+l_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}^{ik})} \sum_{(n_s=n-j_i)}^{(n_{sa}-j_{sa}-j_i)} \\
 & \frac{(n_i-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}+j_s-j_{ik}-l_{k_1}-1)!} \\
 & \frac{(n_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-l_{k_1}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j_{sa}^{ik})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(n_{sa}-n_s-1)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_i=j_{sa}+s-j_{sa})}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$

$D + s - n < l_i \leq D + l_s + j_i - n - 1$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(\)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_{is} + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} - l_s - j_i - l_s - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - 1)! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}$$

$$\sum_{j_{ik}+j_{sa}^{lk}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{\dots} \sum_{j_i=j_{sa}^{ik}+1}^{\dots} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

GÜLDÜZÜNYA

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{j_s - j_{ik} - j_{sa} + 1} \binom{j_s - j_{ik} - j_{sa} + 1}{k} \cdot \sum_{j_{ik}=j^{sa} - k - j_{sa}}^{j_i - j_s + 1} \binom{j_i - j_s + 1}{j_{ik}} \cdot \sum_{n_{ik}=n_{is} + j_s - j_{ik} - k_1}^{n_{is} + j_s + 1} \binom{n_{is} + j_s + 1}{n_{ik}} \cdot \sum_{n_{sa}=n_{ik} + j_{ik} - j^{sa} - k_2}^{n_{sa} + j^{sa} - j_i} \binom{n_{ik} + j_{ik} - j_s - s - k_2}{n_{sa}}$$

$$D > n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{(j_s=j_{ik}+j_{sa}+1)}^{()} \sum_{(l_{ik}+l-j_{sa}+1)}^{()} \sum_{(j_{ik}=j_{sa}+j_{sa}^{ik})}^{()} \sum_{(j_i=l_i+n-D)}^{()} \sum_{(n_i=n+\mathbb{k}_1)}^{()} \sum_{(n_{is}=n+\mathbb{k}_2-j_{sa})}^{()} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik}+1)}^{()} \sum_{(n_{sa}=n-j_{sa}+1)}^{()} \sum_{(n_s=n-j_i+1)}^{()} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜZMÜNYA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-l-j_{sa}^{ik}+1}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k_1}-j_{sa}^{ik})! \cdot (l_s-l-1)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k_1}-j_{sa}^{ik})! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_s - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_s \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} - j_{sa} \leq j_i \leq j_{sa} - s + j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{ik} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n \leq l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$j_{sa} \leq j_{sa}^i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$\{j_s, j_{sa}^{i-1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + l_k \wedge$$

$$l_{k_2}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$fzS_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_i+n}^{(\quad)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-l_k) \cdot n_{sa}^{j_{sa}-j_i}}{(n_{sa}=n_{sa}+1) \cdot n_s=n-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} + j_s + 1)!}$$

$$\frac{(n_{ik} - l_k - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_k)!}$$

$$\frac{(n_{ik} \cdot n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(\quad)} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{sa}^{sa} + j_{sa}^{ik} - j_{sa}^{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{sa} \leq j_i + j_{sa} - s \wedge j_{sa}^{sa} + j_{sa}^{ik} - j_{sa}^{sa} \leq j_i \leq$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - l_{sa} \wedge$

$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$

$D \geq n < n \wedge l = i > 0 \wedge$

$j_s \leq j_{sa}^l - j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}, \dots, j_i\}$

$s > 4, l = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_2 = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{is}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - 1)!}{(j_i + j_s - 1)! \cdot (n_{sa} + j_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa})^{l_i - j_i - l_{sa}} \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\infty} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{(\quad)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_{sa}+j_{sa}^{lk}-l-j_{sa}+1} \sum_{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}^{(\quad)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{is}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

GÜLDÜZÜMÜ

A

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - j_{sa}^{ik} = l_s$

$D + s - n < l_i \leq D + l_s + s - n - \mathbb{k}_2 \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

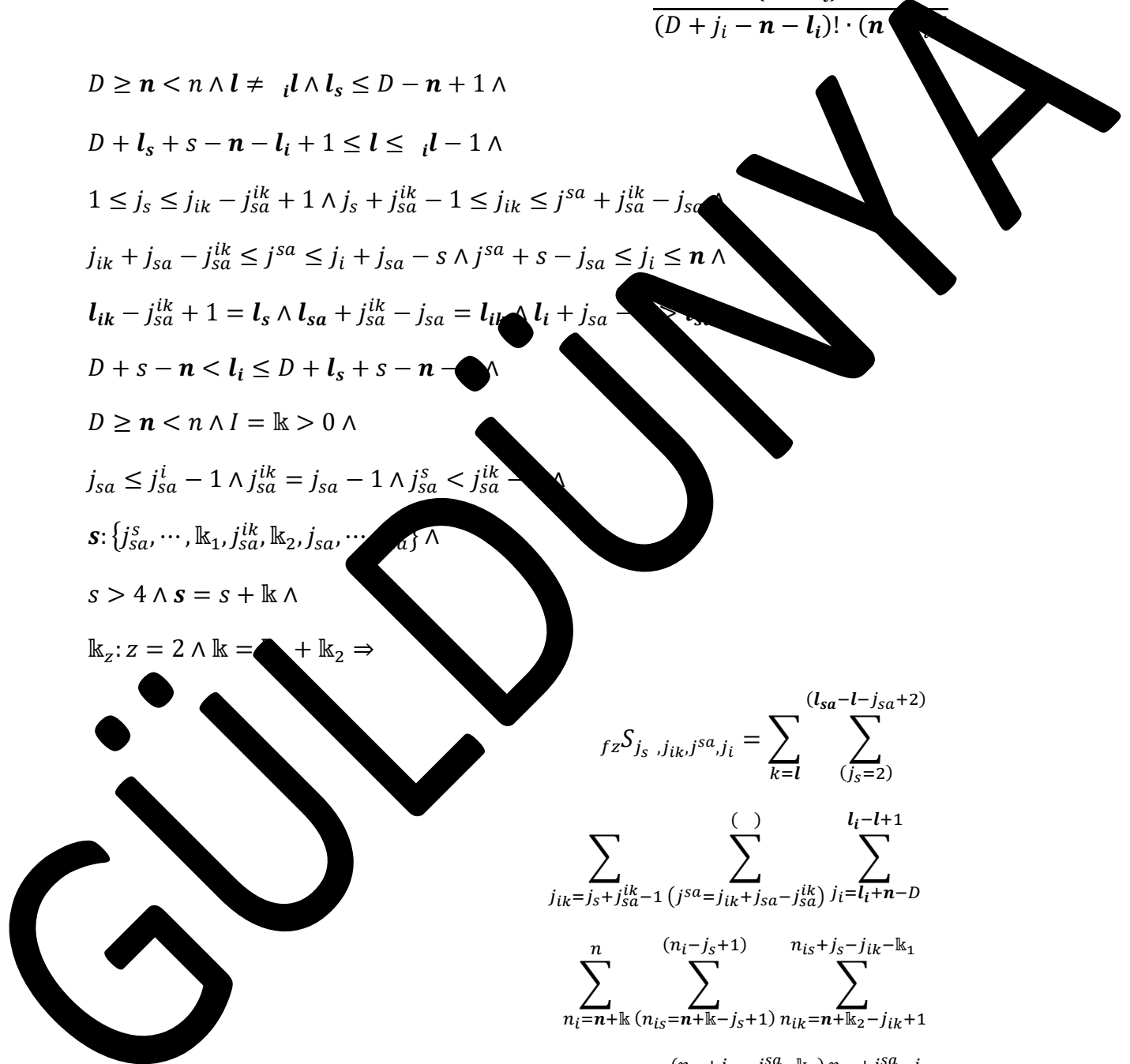
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{sa}-l-j_{sa}+2)} \sum_{(j_s=2)}^{(l_i-l+1)} \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=l_i+n-D}^{(n)} \sum_{n_i=n+\mathbb{k}}^{(n_i-j_s+1)} \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{sa}-j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$



$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_i + j_{sa} - l_s - s)!}{(j^{sa} + l_i - l_s - s)! \cdot (j_i + l_i - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_{sa}-l-j_{sa}+2)} \sum_{(j_s=l_i+n-D-s+1)}$$

$$\sum_{j_{ik}+j_{sa}^{lk}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\sum_{\substack{f \geq j_{sa}^{ik}, j_{sa}^{sa}, j_i \\ l \neq l}}^{(l_{ik} - j_{sa}^{ik} + 2)} \sum_{(j_s=2)}^{l_i - l + 1} \sum_{(j_{ik}=j_s+j_{sa}^{sa}-1)}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{(j_i=l_i+n-D)}^{l_i - l + 1} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \sum_{(n_{sa}=n-j_{sa}^{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik}=j_s}^{l_{ik}-l-1} \sum_{j_{sa}=j_{sa}-j_{sa}^{ik}}^{j_{sa}-j_{sa}^{ik}-1} \sum_{j_{ik}=j_s}^{l_{ik}-l-1} \sum_{j_{sa}=j_{sa}-j_{sa}^{ik}}^{j_{sa}-j_{sa}^{ik}-1} \sum_{n+l_k}^n \sum_{n_{is}=n+l_k}^{j_s+1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{j_s+1} \sum_{n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k2}}^{j_s+1} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{j_s+1} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_i - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

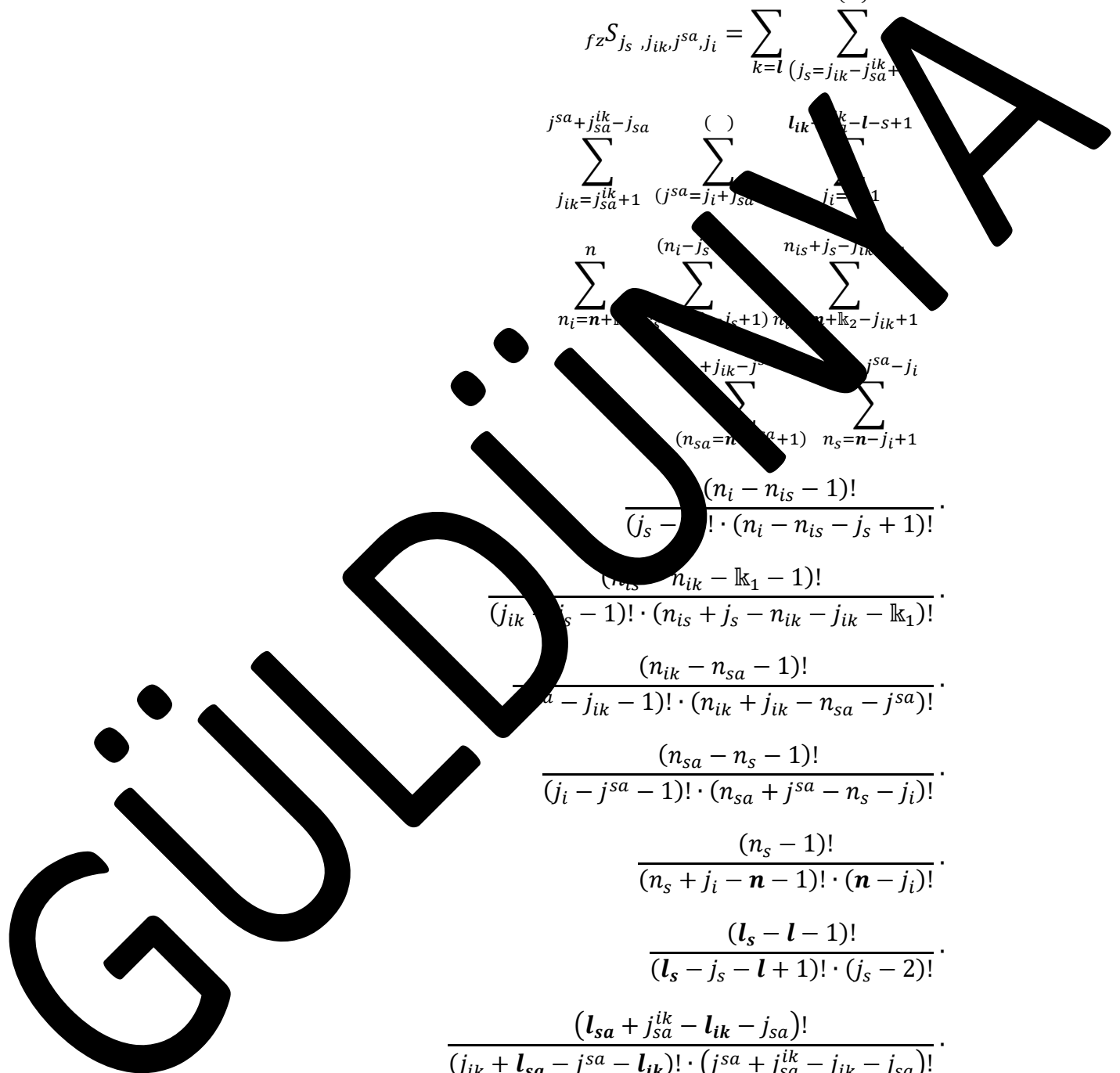
$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}^{ik})}^{(\)} \sum_{j_i=1}^{l_{ik}-k-l-s+1} \sum_{n_i=n+1}^n \sum_{(n_i-j_s)}^{(n_i-j_s)} \sum_{(n_{is}+j_s-j_{ik})}^{(n_{is}+j_s-j_{ik})} \sum_{(n_{is}+k_2-j_{ik}+1)}^{(n_{is}+k_2-j_{ik}+1)} \sum_{(n_{sa}=n_{sa}^{ik}+1)}^{(n_{sa}=n_{sa}^{ik}+1)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{ik}-j_{sa}^{ik})} \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(n_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^{ik})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$



$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_{ik}+j_{sa}^{lk}-l-s}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 & \frac{(n_{ik}+j_{ik}-l_k-1)! \cdot (n_{sa}+j_{sa}-j_i-1)!}{(n_{sa}=n_{sa}^{lk}+1) \cdot (n_s=n-j_i-1)!} \\
 & \frac{(n_i-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}+j_s-j_{ik}-l_k-1)!} \\
 & \frac{(n_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-l_k-1)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(n_{sa}-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=s+1}^{l_{ik}+j_{sa}^{lk}-l-s+1}
 \end{aligned}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i \geq l_{ik} \wedge l_{sa} + j_{sa} - s = l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s = 4 \wedge s = \dots + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=s+1}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} n_{sa}+j^{sa}-j_i}{\sum_{n_s=n-j_i+1}} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n - j_i - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{lk}+1}^{l_s+j_{sa}^{lk}-l} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} n_{sa}+j^{sa}-j_i$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - j_i - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_s - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=s+1}^{l_s+s-l} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^{s, j_{sa}^{ik}} = \sum_{j_{ik}=j_{sa}^{ik}+1}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{j_i=j_{sa}^{ik}+s-j_{sa}}^{(j_i - j_{sa}^{ik} + 1)} \sum_{j_{sa}=j_{sa}^{ik}+1}^{(j_{sa} + j_{sa}^{ik} - j_{sa} - (l_{ik} + j_{sa}^{ik} - l - s + 1))} \sum_{n_i=n+k}^{(n_i - j_s + 1)} \sum_{n_{is}=n+k-j_s+1}^{(n_{is} + j_s - j_{ik} - k_1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{n_{sa}=n-j^{sa}+1}^{(n_{sa} + j^{sa} - j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

GÜLDÜNKYA

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j_{sa}=l_{ik}+j_{ik}-l-s+2)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -$$

GÜLDÜNYA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^a+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{(j_{sa}=j_{sa}^a+1)}^{()} \sum_{j_i=j_{sa}^a+s}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^a)}^{()} \sum_{n_s=n_{sa}+j_{sa}^a}^{()}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (n_{is}-j_{ik}+l_{k_1}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^s-1)! \cdot (n_{is}-j_{ik}+l_{k_1}-j_s-s-1)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq l < n \wedge l = l_{k_1} + l_{k_2} \wedge$$

$$j_{sa} \leq j_{sa}^a - 1 \wedge j_{sa}^{ik} = j_{sa}^a - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, l_{k_1}, j_{sa}^a, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = l_{k_1} + l_{k_2} \wedge$$

$$l_{k_2} = l_{k_1} \wedge l_{k_1} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_i+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_{is} + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=j_{sa}+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} \sum_{k=l}^{(j_s)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(j_s)} &= \sum_{j_{ik}=j_{sa}^{ik}+1}^{(j_s-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\ \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} & \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \\ \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} & \end{aligned}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik}=j_{sa}^{lk}+1}^{l_{ik}-1} \sum_{j_{ik}=j_{sa}^{lk}+1}^{j_{sa}^{lk}+j_{sa}-j_{sa}^{lk}} \sum_{j_i=j^{sa}+s-j_{sa}}^{(n_i-1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}}^{(n_{is}=n+l_{k_2}-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$j_i \geq n - l_i \wedge l_i \neq j_i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$

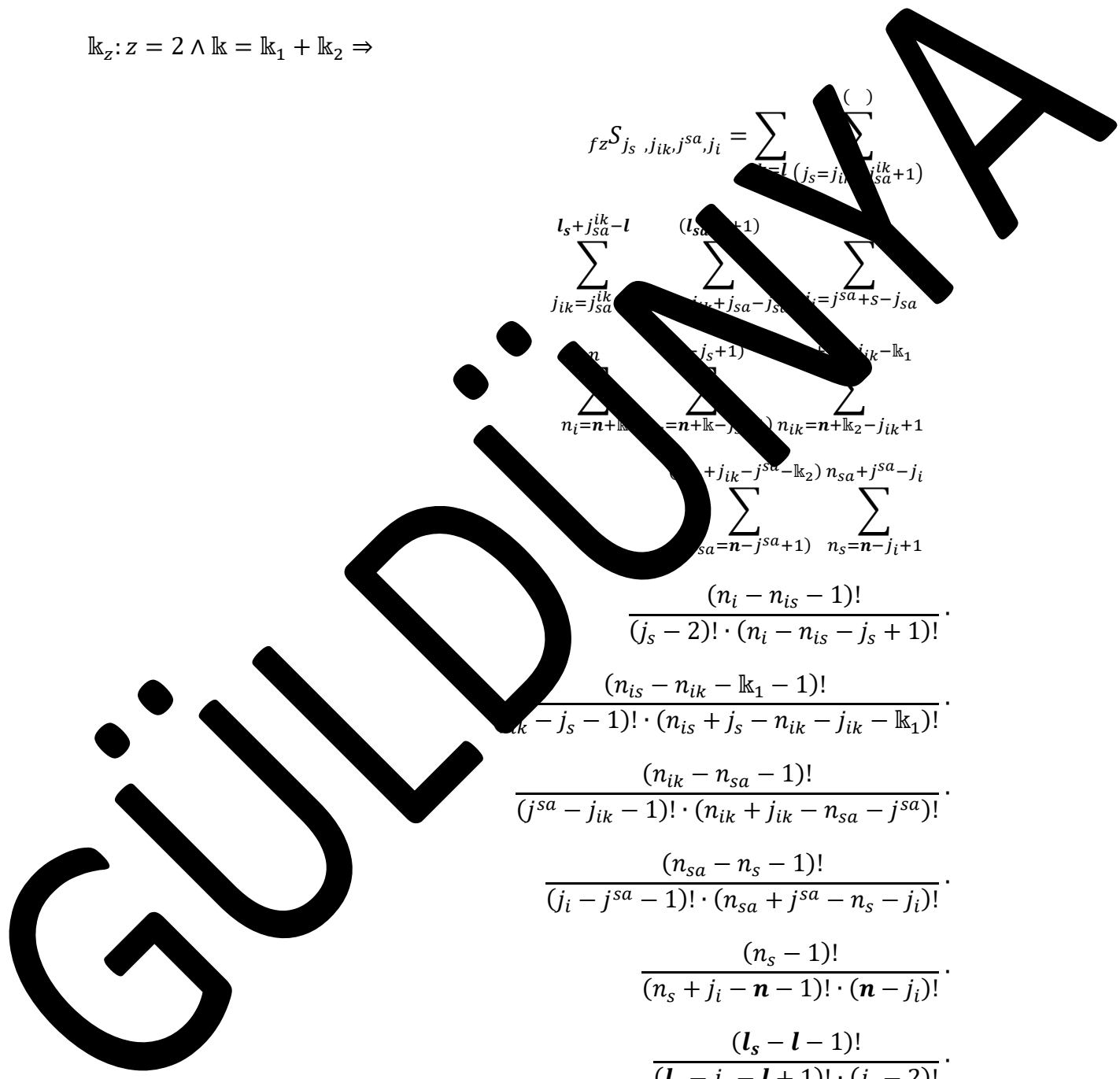
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{j_s=j_{ik}+1}^{()} \sum_{j_{sa}=j_{sa}^{ik}+1}^{()} \sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{j_{ik}+j_{sa}-j_{sa}^{ik}}^{(l_{sa}+1)} \sum_{j_{ik}=j_{sa}+s-j_{sa}}^{()} \sum_{n_i=n+\mathbb{k}_1}^{n} \sum_{n_i=n+\mathbb{k}_1-j_s+1}^{n-j_s+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j_{sa}+1}^{n_{sa}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$



$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{(\)} \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s}^{(\)} \sum_{(n_{sa}=n_{ik}-j_{sa}^{ik}-j_s)}^{(\)} \sum_{j_{sa}=j_i}^{(\)} \frac{(n_{ik}-j_{ik}-j_s-l_k-1)!}{(n_i+j_{ik}-n-l_k-1-j_{sa}^s)! \cdot (n_i+j_{sa}-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq 1 \wedge l_i \leq D + s - 1 \wedge$$

$$1 < j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_i + j_{sa} \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa}^{ik} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_k > 1 \wedge$$

$$j_{sa}^{ik} = j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + l_k \wedge$$

$$l_{k_z}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}^{(\)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{(l_{sa}-l+1)}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{(n_{is}+j_s-j_{ik}-l_{k_1})} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{(n_{sa}+j_{sa})} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_{is}+j_s-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j_{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(j_{sa}+s-j_{sa})} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 1)!} \cdot \frac{(D - l)}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = j_{ik} \wedge l_i + j_s - s = l_s \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - j_i - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j_s + j_{sa}^{ik} - 1}^{(j_s + j_{sa}^{ik} - 1)} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{(j_s + j_{sa}^{ik} - 1)} \sum_{j_i=j^{sa} + s - j_{sa}}^{(j_s + j_{sa}^{ik} - 1)} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(j_s + j_{sa}^{ik} - 1)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(j_s + j_{sa}^{ik} - 1)} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned} S_{j_s, j_{ik}, j_i} &= \sum_{k=1}^{()} (j_s = j_{ik} - j_{sa}^{ik} + 1) \\ &\sum_{j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} (j^{sa}) \sum_{j_i+j_{sa}-s}^{()} l_{ik+s-l-j_{sa}^{ik}+1} \\ &\sum_{i=n+\mathbb{k}}^n (n_i-j_s+1) \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \\ &\sum_{n_{sa}=n-j^{sa}+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\ &\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\ &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j_s=j_{ik}^{ik}+1)}^{()} \sum_{(j_s=j_{ik}^{ik}+1)}^{()} \\
 & \sum_{n_i=n+1}^n \sum_{n_{is}=n+l_k-1}^{n-j_s+1} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n-j_s+1} \sum_{n_{sa}=n-j_{sa}+1}^{n-j_s+1} \sum_{n_s=n-j_i+1}^{n-j_s+1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_i+n-l-j_{sa}^{ik}+1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(n_{ik}-j_{ik}+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D) j_i-n-l_i! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq n + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_i \leq D - l_s + s - l - 1 \wedge$$

$$\geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_i - 1 \wedge j_{sa}^{ik} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$\geq 4 \wedge j_{sa}^{ik} - s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}-l_{k_2}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_i+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_{is} + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa} = l_i + n + j_{sa} - D - s)}^{(l_{ik} + j_{sa} - l - j_{sa}^{ik} + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - l_{ik})!} \cdot$$

$$\frac{(l_i - l_i)!}{(n - l_i)! \cdot (n - j_i)!} \cdot$$

$$\sum_{j_s=1}^{l_i} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_i-j_s+l-s+1}$$

$$\sum_{j_s^{ik}=j_{sa}^{ik}+1}^{l_i+1} \sum_{j_s^{lk}=j_{sa}^{lk}+2}^{(l_i+j_s-l-s+1)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot$$

GÜLDÜMÜŞA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{()} \sum_{j_s=j_{ik}^{ik}+1}^{()} (l_{ik} + j_{sa}^{ik} + 1) \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{i=n+j_{sa}-D}^{()} \sum_{i=j^{sa}+s-j_{sa}}^{()} (l_{ik}+1) \sum_{n_i=n+l_k}^{()} \sum_{n+l_k-j_s}^{()} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_s - j_{sa}^{ik} - 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=n+l+s-j_{sa}}^{(n_i-j_s+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_{is}+j_s-n-\mathbb{k}_1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}^{(n_{ik}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=l_s+j_{sa}-l-s+1)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDENWA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i \wedge j_{sa} - s = l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + \dots - n - 1)!}{(n_s + \dots - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + \dots - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_i+1} \sum_{(l_i+j_{sa}-l-s+1)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik} = n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{j_i = j^{sa} + s - j_{sa}}^{j_{sa}^{lk} + j_{sa} - j_{sa}^{lk}} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_{is} = n + l_{k_2} - j_s + 1)} \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2}}^{(n_{sa} = n_{sa} + j^{sa} - j_i)} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$j_i \geq n - l_i \wedge l_i \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{j_s} \sum_{j_{sa}=j_{ik}+1}^{j_s}$$

$$\sum_{j_{ik}=j_{sa}^{ik}-D-s-1}^{(l_i+j_{sa}-l-s+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s)}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{is}+j_s-j_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

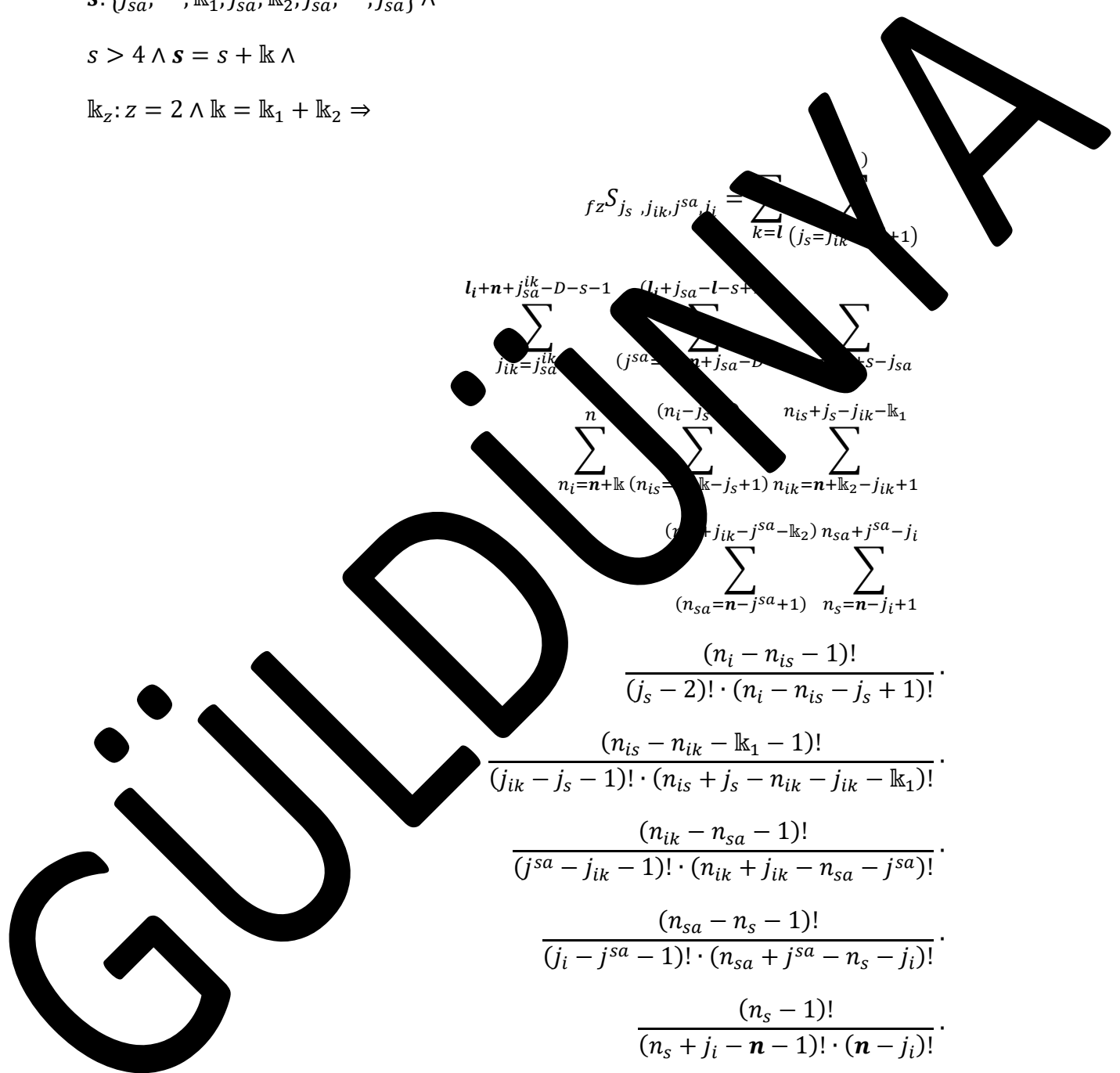
$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$



$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_{i_s}=j^{sa}+s-j_{sa}}^{(\quad)} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k}^{n_{i_s}+j_s-l_k-k_1} \\
 & \sum_{(j_{sa}=n-j)}^{(\quad)} \sum_{(j_i=j+1)}^{(\quad)} \\
 & \frac{(n_{i_s} - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_s} - k_1 - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{i_k} + j_s - n_{i_k} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{i_k} - n_{sa} - 1)!}{(j_{i_s} - j_{ik} - 1)! \cdot (n_{i_k} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} - \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{j_{ik} = l_i + n + j_{sa}^{ik} - D - s}^{l_s + j_{sa}^{ik} - l} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i = j_{sa} + s - j_{sa}}$$

$$\sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik}}$$

$$\sum_{(n_{sa} = n_{ik} + j_{ik} - j_{sa} - k_2)} \sum_{n_s = n_{ik} + j_{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^{ik})! \cdot (n + j_{sa}^{ik} - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - s)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} - j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_i \leq l_i + l_s + s - n = D$

$D > n < n \wedge k = k > 0$

$j_{sa}^{ik} - j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa}^{ik} - 1 < j_{sa}^{ik} - 1 \wedge$

$\{j_{sa}^{ik}, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s > 4 \wedge s = s - l_s \wedge$

$k_2 - k = k - k = k_1 + k_2 \Rightarrow$

$$fz^{S_{j_s, j_{ik}, j_{sa}, j_i}} = \sum_{k=l}^{(l_i + n - D - s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik} = j_s + j_{sa}^{ik} - 1} \sum_{(j_{sa} = l_i + n + j_{sa} - D - s)}^{(l_i + j_{sa} - l - s + 1)} \sum_{j_i = j_{sa} + s - j_{sa}}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - l_{k_1} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} + j_s - j_{i_k} - l_{k_1})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} + j_{i_k} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{s_a} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})^{j^{s_a} - l_{i_k}} \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_{i_k} - l - j_{s_a}^{i_k} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
 & \sum_{j_{i_k} = j_s + j_{s_a}^{i_k} - 1}^{(l_i + j_{s_a} - l - s + 1)} \sum_{(j^{s_a} = j_{i_k} + j_{s_a} - j_{s_a}^{i_k})} \sum_{j_i = j^{s_a} + s - j_{s_a}} \\
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - j_i)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s - j_i - 1)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j^{sa} - l_{ik} - j^{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j^{sa} - j_{ik} - j^{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{ik} - l - j_{sa}^{ik} + 2)} \sum_{(j_s = l_i + n - D - s + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{lk} - 1}^{(\quad)} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(\quad)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(\quad)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n + j^{sa} - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENWA

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned}
 j_{ik} + j_{sa} - j_{sa}^{ik} &= \sum_{k=l}^{(n-l-D-s)} \sum_{(j_s=2)}^{(n-l-D-s)} \\
 &\sum_{(j_{ik}+j_{sa}-1)}^{(l_i+j_{sa}-l-s+1)} \sum_{(i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{(j_i=j_{sa}+s-j_{sa})} \\
 &\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 &\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \\
 &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\
 &\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
 &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDÜZÜMÜYA

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=0}^{(l_s - l + 1)} \sum_{j_s = l_i + n - l - s + 1}^{(l_s - l + 1)} \sum_{j_{ik} = j_s + j_{sa}^{ik}}^{(l_i + j_s - l - s + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(l_s - l + 1)} \\
 & \sum_{n_i = n - j_s + 1}^n \sum_{n_{is} = n + k_1 - 1}^{n - j_s + 1} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n - j_s + 1} \sum_{n_{sa} = n - j^{sa} + 1}^{n - j_s + 1} \sum_{n_s = n - j_i + 1}^{n - j_s + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j}^{()}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-k_2)}^{()} \sum_{n_s=n_{sa}+j_s}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa})!}{(n_{ik}-j_{ik}-n-k_2-j_{sa})! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s > D - n + 1 \wedge$
 $1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$
 $j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_i < j_i + j_{sa} - s \wedge j^{sa} + j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$
 $l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} \wedge l_{sa} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$
 $D - n < l_{sa} < D + l_s + 1 - n - 1 \wedge$
 $D \geq n < l \wedge I = k > 0 \wedge$
 $j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$
 $s: \{j_{sa}^s, \dots, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$
 $s > 4 \wedge s = s + k \wedge$
 $k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{ik}+s-l-j_{sa}^{ik}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_i+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2}^{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\begin{aligned}
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n-j_i-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{lk}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(\quad)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{ik}+s-l-j_{sa}^{lk}+1} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\quad)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = k > 0 \wedge$

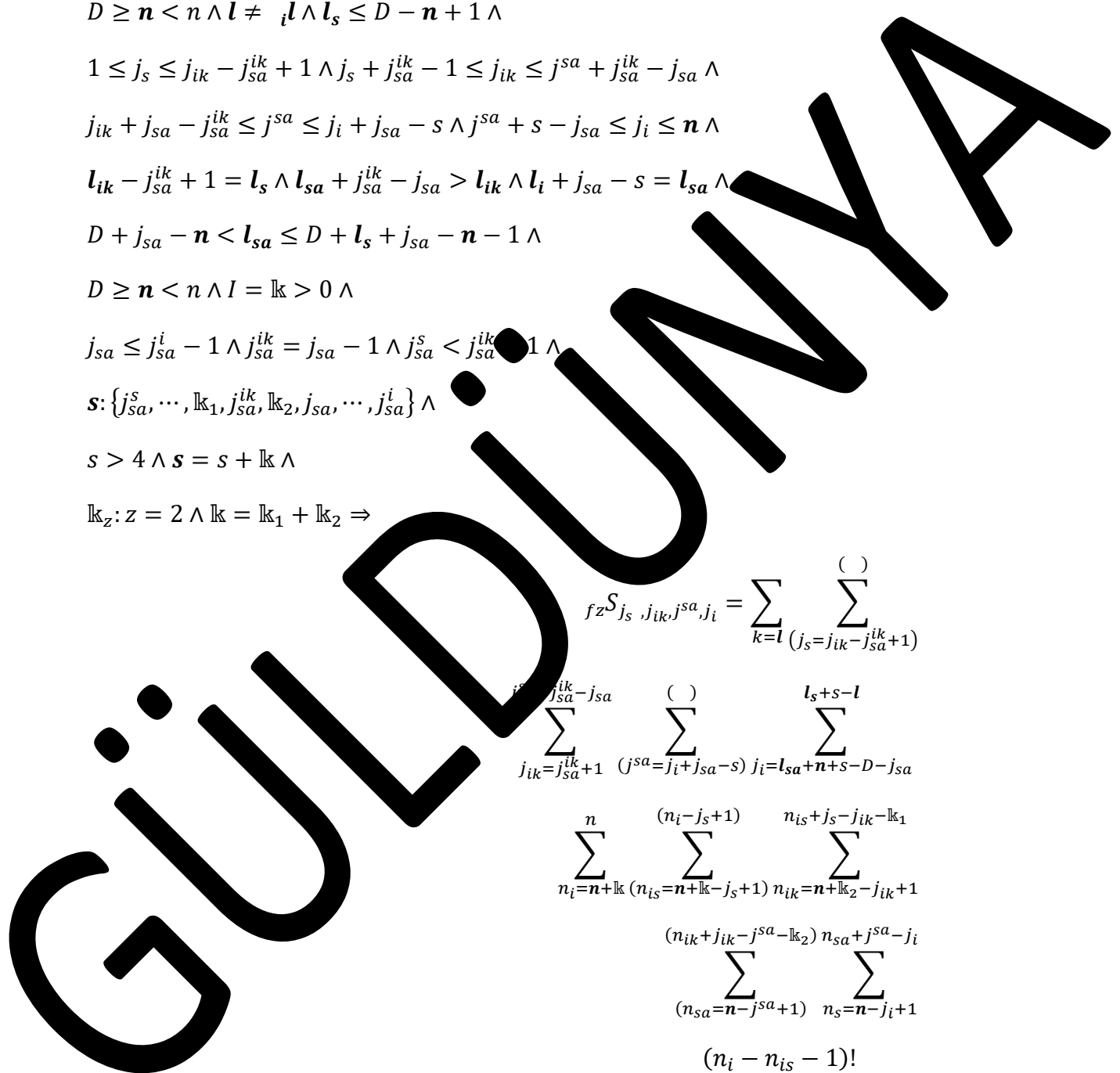
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$\begin{aligned} f_z S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\ &\sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \\ &\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\ &\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \end{aligned}$$



$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - l_{ik})!}$$

$$\frac{(l_s - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_s=1}^{l_s} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_s}$$

$$\sum_{j_{ik}=j_s}^{l_s+j_{sa}^{ik}-l} \sum_{j_i=j_i+j_{sa}-s}^{l_s} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_{ik}=j_{sa}^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{i+j_{sa}-s}^{l_s} \sum_{n+s-D-j_{sa}}^{l_s} \sum_{k=l}^{(j_s=j_{ik}+j_{sa}^{ik}+1)}$$

$$\sum_{n_i=n+k} \sum_{n+k-j_s} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{n_{sa}=n_{ik}+j_s-j_{sa}-k_2} \sum_{n_s=n_{sa}+j_{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_{ik} \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} (l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)$$

$$\sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=n-j_s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i-j_s+1)}^{(n_i+j_s-n-\mathbb{k}_1)}$$

$$\sum_{(n_{is}=n+\mathbb{k}-j_s)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{ik}+j_{sa}-l-j_{sa}^{ik}+2)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-k_1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)!(n_{is}-n_{ik}-j_{ik}-k_1)!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j^{sa}-j_{ik}-1)!(n_{is}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}$$

GÜLDENWA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + \dots - n - 1)!}{(n_s + \dots - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D + \dots - l_i)!}{(D + \dots - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{(j_{ik} - j_{sa}^{ik} - 1)} \sum_{j_{sa} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_s - j_{sa} - l)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(n_{is} - 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - k_1}^{(n_{ik} - 1)} \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - k_2}^{(n_{sa} - 1)} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{(n_s - 1)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$j_s \geq n - 1 \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$

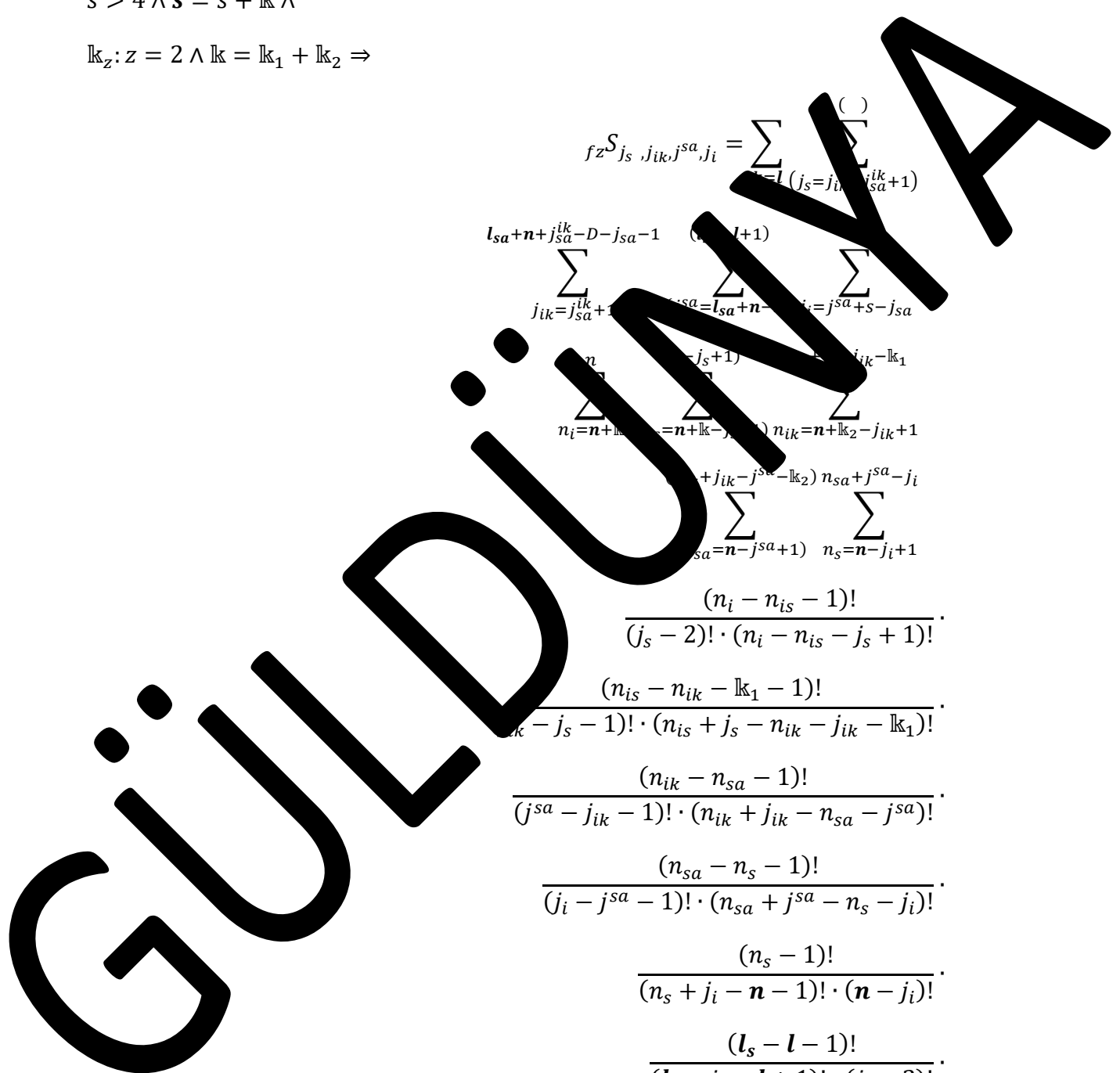
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{j_s=j_{ik}+1}^{j_{sa}^{ik}+1} \sum_{j_{ik}=j_{sa}+1}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{j_{sa}=l_{sa}+n-j_{sa}+1}^{(l+1)} \sum_{n_i=n+\mathbb{k}_1-j_{sa}+1}^{n-j_{sa}+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{ik}-\mathbb{k}_1} \sum_{j_{sa}=n-j_{sa}+1}^{+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$



$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k+1}^{n_{is}+j_{ik}-l_{k1}} \\
 & \sum_{n_{sa}=n-j_{sa}^{ik}}^{(n_{ik}+j_{ik}-n_{k2})} \sum_{n-j_i+1}^{n_{sa}+j^{sa}-} \\
 & \frac{(n_{is}-n_{k1}-1)!}{(n_{is}-2)! \cdot (n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{k1}-1)!}{(j_{ik}-j_{sa}-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-l_{k1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{ik}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} - \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - \dots)!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^{ik})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l + 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)! \cdot (n - j_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j_{sa}^{ik} + j_{sa} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$

$D + j_s - n < l_{sa} \wedge D + l_s + j_{sa} - \dots - 1$

$D > n < n \wedge l_{sa} = l_k > 0$

$j_{sa}^{ik} < j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} < j_{sa}^{ik} - 1 < j_{sa}^{ik} - 1 \wedge$

$s \in \{j_{sa}^{ik}, \dots, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s > 4 \wedge s = j_{sa}^{ik} \wedge$

$l_{k_2} = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_{k_2}-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - l_{k_1} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} + j_s - j_{i_k} - l_{k_1})!}$$

$$\frac{(n_{i_k} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} + j_s - n_{s_a} - j^{s_a})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_s - j^{s_a} - 1)! \cdot (n_{s_a} + j_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})! \cdot (j^{s_a} - l_{i_k})! \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{()}$$

$$\sum_{j_{i_k}=l_{s_a}+n+j_{s_a}^{i_k}-D-j_{s_a}}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{(l_{s_a}-l+1)} \sum_{j_i=j^{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_{k_2}-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i}$$

GÜLDÜŞÜMÜ

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - j_{ik} - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_s - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_i=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+l-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{()} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENWA

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

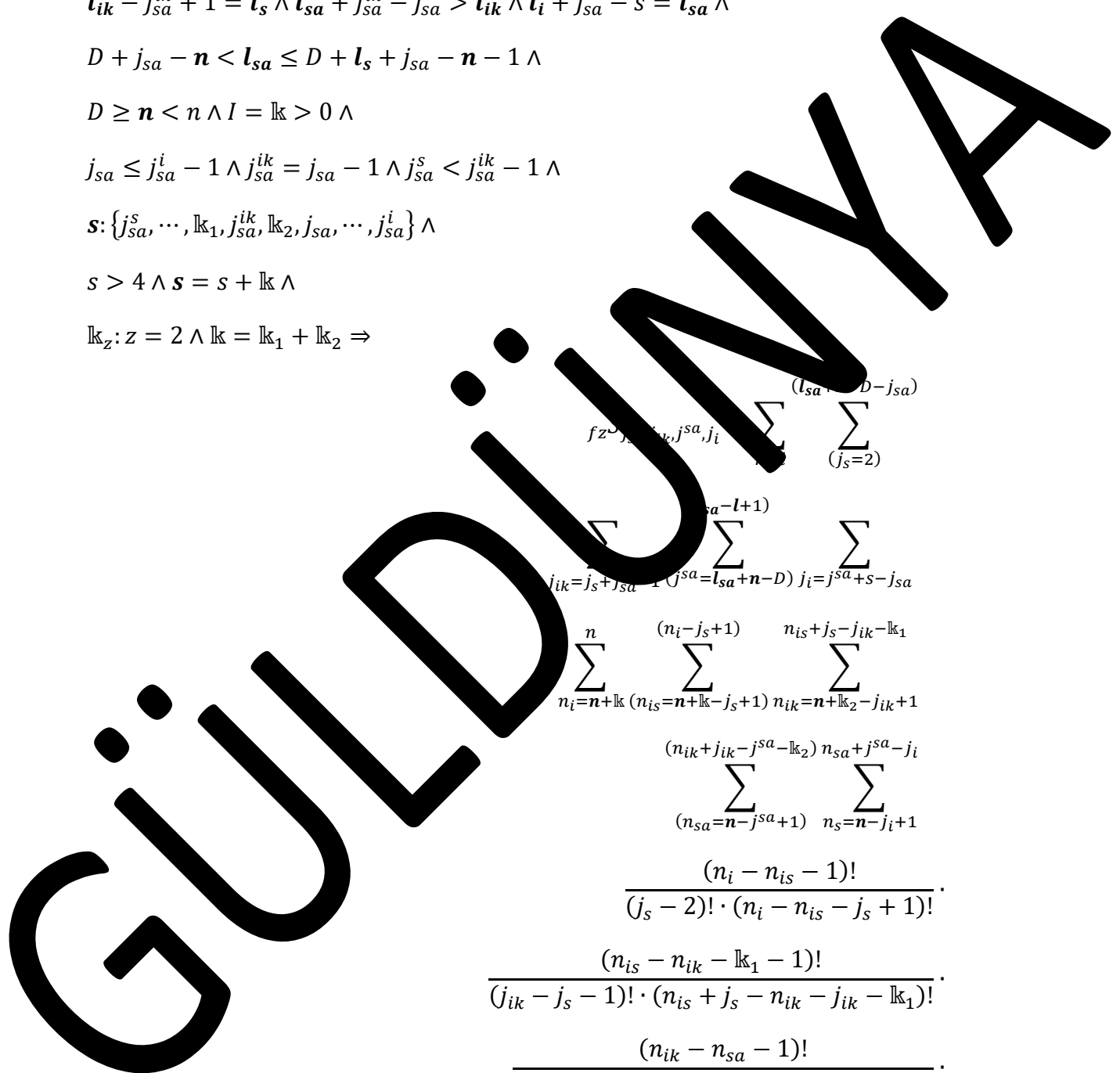
$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz = \sum_{j_s=2}^{(l_{sa} + D - j_{sa})} \sum_{j_{ik}=j_s+j_{sa}-1}^{(j_{sa}^{sa-l+1})} \sum_{n_i=n+k}^n \sum_{n_{is}=n+k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}+j_{sa}-j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$



$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l_{sa}+n-j_{sa}^{ik}+1}^{(l_{ik}-j_{sa}^{ik}+2)} \frac{(l_{ik}-j_{sa}^{ik}+2)!}{(l_{sa}+n-j_{sa}^{ik}+1)!} \cdot \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}}^{(l_s-l+1)} \sum_{j_{sa}=j_{ik}+j_{sa}-j_s}^{(l_s-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_s-l+1)} \cdot \\
 & \sum_{n_i=n+j_s-j_{sa}^{lk}+1}^n \sum_{n_{is}=n+l_k-1}^{n-j_s+1} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n-j_s+1} \cdot \\
 & \sum_{j_{sa}=n-j^{sa}+1}^{n+j_{ik}-j_s-l_k-1} \sum_{n_s=n-j_i+1}^{n+j_{ik}-j_s-l_k-1} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_{ik}-l-j_{sa}^{ik}+2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{()} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}^{()}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(n_i-j_s+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk}}^{()}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{lk}-s-l_{k1})!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^s)! \cdot (n_{ik}+j_{ik}-j_{sa}^{lk}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq n - a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{ik} \leq j_i + j_{sa} - s \wedge j_{sa}^{lk} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 = l_{sa} + j_{sa}^{lk} - j_{sa}^{ik} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$\geq n < n \wedge l = l_k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s < j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{lk}, l_{k2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$j_{sa}^{lk} > 4 \wedge j_{sa}^s + l_k \wedge$$

$$l_{k2}: z = 2 \wedge l_k = l_{k1} + l_{k2} \Rightarrow$$

$$f_z^S j_s, j_{ik}, j_{sa}, j_i = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}^{(l_{sa}+n-D-j_{sa})}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(l_{sa}-l+1)}^{(j_{sa}=l_{sa}+n-D)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-l_{k_1})} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{(n_{sa}+j_{sa})} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1) \cdot (n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1) \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(l_s-l-1)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_s-l-1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(l_{sa}-l+1)}^{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_i-j_s+1)}^{(n_{is}=n+l_k-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-l_{k_1})}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s-l-1)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_s-l-1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$

$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$

$D \geq n < n \wedge l = k > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

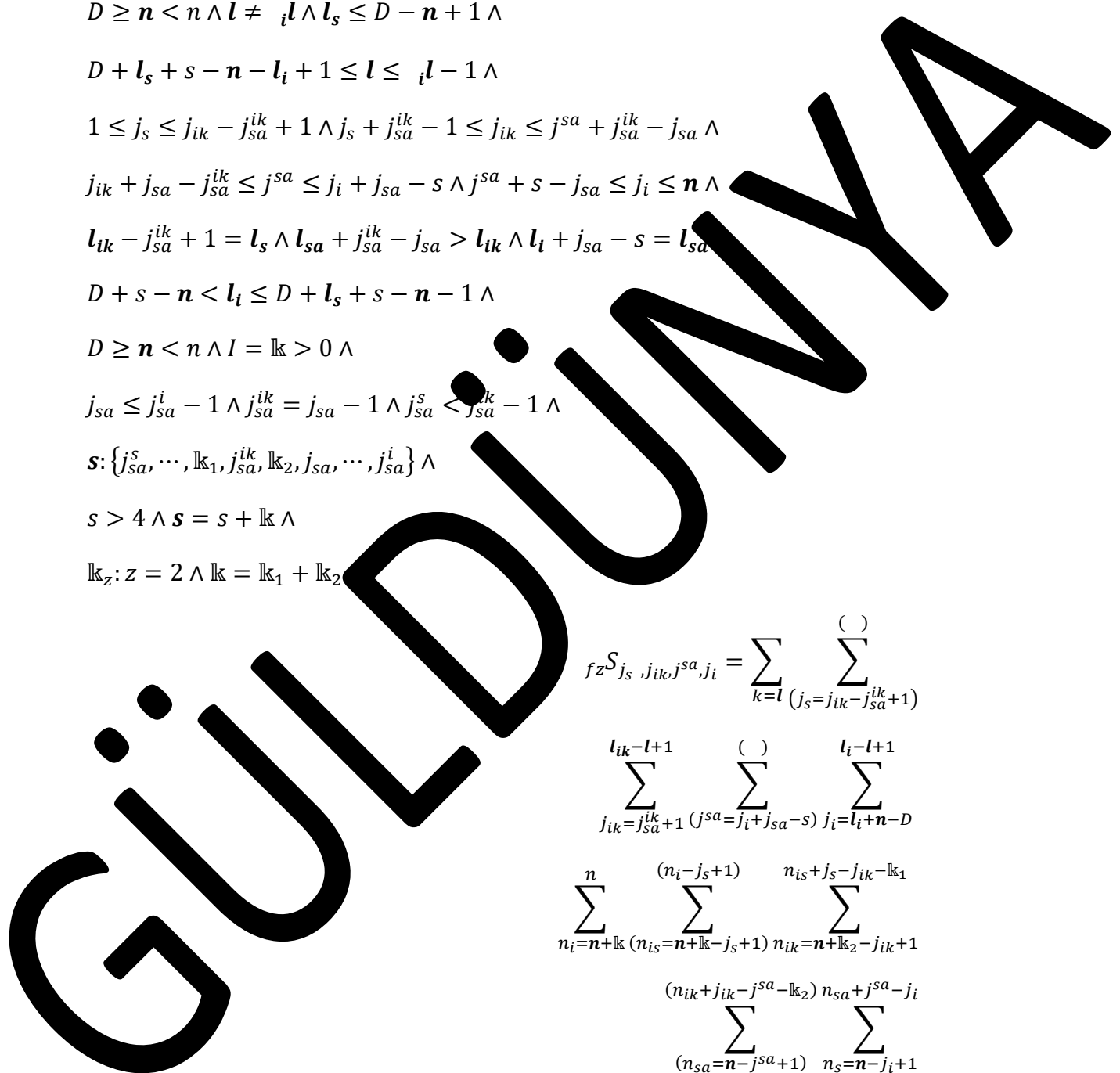
$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$



$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{lk} - j_{sa} - l_{sa})!}$$

$$\frac{(D - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!}$$

$$\sum_{j_s=1}^{n_{ik} - j_{sa}^{ik} + 1}$$

$$\sum_{j_s=j_{sa}^{lk} - j_{sa}^{ik} + 1}^{n_{sa} + j_{sa}^{lk} - j_{sa} - l_{sa}}$$

$$\sum_{j_i=n+l_k}^n \sum_{n_{is}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}}^{(n_{sa}+j_{sa}^{lk}-j_{sa}-l_{sa})} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned}
 f_z^{(s)} &= \sum_{j_{sa}^{ik} - j_{sa} + 1}^{(j_{sa}^{ik} - j_{sa} + 1)} \\
 &= \sum_{j_{sa}^{ik} - j_{sa} + 1}^{(j_{sa}^{ik} - j_{sa} + 1)} \sum_{l_i - l + 1}^{(l_i - l + 1)} \\
 &= \sum_{j_{ik} = j_{sa}^{ik} - (j_{sa} - j_i + j_{sa} - s)}^{(j_{sa} - j_i + j_{sa} - s)} \sum_{j_i = l_i + n - D}^{(j_i = l_i + n - D)} \\
 &= \sum_{n_i = n + k}^{(n_i = n + k)} \sum_{(n_{is} = n + k - j_s + 1)}^{(n_{is} = n + k - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{(n_{is} + j_s - j_{ik} - k_1)} \\
 &= \sum_{(n_{sa} = n - j_{sa} + 1)}^{(n_{ik} + j_{ik} - j_{sa} - k_2)} \sum_{n_s = n - j_i + 1}^{(n_{sa} + j_{sa} - j_i)} \\
 &= \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \\
 &= \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
 &= \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 &= \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 &= \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 &= \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1, \dots, j_s+s-l)} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j_{sa}=j_i+j_{sa}^{ik}, \dots, j_{sa}=k, n-D)} \sum_{n_i=n+k}^n \sum_{(n_i=n+k, \dots, n_i=n)} \sum_{(n_{ik}=n_i-j_{ik}-k_1)} \sum_{(n_{sa}=n_i-j_{ik}-j_{sa}^{ik}, \dots, n_{sa}=n_{sa}+j_{sa}-j_i)} \frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - l_i)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = k > 0 \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l_i \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$l_i < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l_i = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_{sa}-l+1)} \sum_{j_i=n-j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s+1)}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}) \cdot (n_{sa}+j^{sa}-j_i)}{\sum_{j^{sa}=n-j^{sa}+1} \sum_{j_i=j_i+1}}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n-\mathbb{k}_1-1)!}{(j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

GÜLDENYA

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_k)}^{()} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_k-j_{sa}+s-j_s-s)! \cdot (n+j_{sa}-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l-1)!}{(D+l_s-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_{ik} - j_{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - l_k + j_{sa} - s = l_{sa} \wedge$$

$$D - s - n < l \leq D + l_s - s - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_k = 0 \wedge$$

$$l_s \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, l_k, j_{sa}^{ik}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + l_k \wedge$$

$$l_k: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)!(n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - j_{sa}^s$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq j_{sa} + j_{sa}^{ik} - j_{sa}^s$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^s > l_i \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_i+j_{sa}-l-s+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_{is}+j_s-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+l_{sa}-j_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(\cdot)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(\cdot)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!}
 \end{aligned}$$

GÜLDENWA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_i^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_{sa}+s-l-j_{sa}+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik} = n + l_k}^n \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{l_{ik} + s - l - j_{sa}^{lk} + 1} \sum_{j_i = l_{sa} + n + s - D - j_{sa}}^{(n_i - j_s + 1)} \sum_{n_{is} = n + l_k - j_s + 1}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}}^{(n_i - j_s + 1)} \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2})}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i}^{()} \cdot \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^{\dots} = \sum_{i_{ik}=j_{sa}^{ik}+1}^{(n_{is}-n_{ik}-k_1-1)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{sa}-n_s-1)} \sum_{n_s=n-j_i+1}^{(n_s-1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=j_{sa}}^{l_s-l} \sum_{j_{sa}=j_{sa}}^{()} \sum_{n_i=n+k}^n \sum_{(n_i=n+k)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n_i-k_1)}^{()} \sum_{(n_{sa}=n_i-j_{ik}-j_{sa}^{ik})}^{()} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{()} \frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - j_i)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s - s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_s - s - n - l_i + 1 < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-j_s-j_{sa}}^{(n-j_s+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s-1)}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa})!}{(j^{sa}-j_{ik}+1)!} \frac{(n_{sa}+j^{sa}-j_i)!}{(n-j^{sa}+1)!} \frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(\)} \sum_{n_s=l_{k_1}+j^{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n+j_{sa}^{ik}-s)!}$$

$$\frac{(l_s-l-1)!}{(j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l-1)!}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s \leq j_{sa}^{ik} - 1 \leq j_{ik} - j^{sa} + j_{sa} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge j_{sa}^{ik} + j_{sa} - j_{sa}^{ik} = l_i \wedge l + j_{sa} - s = l_{sa} \wedge$

$D - j_{sa} - n \leq l_{k_1} \leq D - l_{k_2} + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = l_{k_1} = 0 \wedge$

$l_{k_1} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_s^s, \dots, l_{k_1}, j_s^s, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + l_{k_1} \wedge$

$l_{k_2}: z = 2 \wedge l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=l_{sa}+n-D)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)}{(D + j_i - n - l)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - j_{sa}^s$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa}^s \leq j_i \leq j_{sa}^s + j_{sa}^{ik} - j_{sa}^s$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^s > l_i \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = \dots + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + l_{sa} - j_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{(\cdot)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{k=l}^s \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{(j_i=s+1)}^{l_s+s-l} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_{sa}^{ik} + 1)!}$$

$$\frac{(l_s - l)!}{(D + j_i - n - l_i)! \cdot (j_i - l)!} +$$

$$\sum_{j_s=2}^{(l_s-l+1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}^{sa}=j_i+j_{sa}-s}^{(l_i-l+1)} \sum_{j_i=l_s+s-l+1}^{(n_{is}+1)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_{is}+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

GÜLDÜZMAYA

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa} + j_{sa}^{ik} - j_s}^{(\)} \sum_{(j_{sa} = j_s - l)}^{(\)} \sum_{s+1}^{l_s + s - l}$$

$$\sum_{n_i = n + k}^n \sum_{(n_i = n + k)}^{(n_i - j_s + 1)} \sum_{(j_s - j_{ik} - k_1)}$$

$$\sum_{(n_{sa} = n - j_{ik} - j_{sa}^{ik})} \sum_{n_s = n_{sa} + j_{sa} - j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{ik} + j_{ik} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_s = l \wedge l_i \leq l + s - l \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{sa} + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - l_s + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_s = j_s - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned}
 f_{z^S} S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \\
 &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_s+j_{sa}-l)} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-l_k)} \\
 &\sum_{(n_{sa}=n_{sa}^{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}^{sa}-j_i)} \sum_{(n_s=n-j_i)}^{(n_{sa}-j_{sa}-j_i)} \\
 &\frac{(n_i - n_{ik} - l_k - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - l_k - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_k)!} \\
 &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 &\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 &\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 &\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)} \\
 &\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{(l_{sa}-l+1)}
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{sa} + j_{ik} - j^{sa} - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_{sa} + j_i - n_s + 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s - j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{()}{}}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{\binom{()}{}}$$

GÜLDÜSÜZ

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s + j_{sa}^{ik} - l} \sum_{(j_s)} \sum_{(j_i=j^{sa} + s - j_{sa})}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_s + 1)!}$$

$$\frac{(n - l_i)!}{(n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{-l+1} \sum_{(j_s=2)}$$

$$\sum_{l_s+l_s}^{-l+1} \sum_{(j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{j_s=j_{ik}+j_{sa}^{ik}+1}$$

$$\sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{j_{ik}+j_{sa}-j_s} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l} \sum_{n+l-k-j_s} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{n_{sa}=n_{is}+j_s-j_{sa}-k_2} \sum_{n_s=n_{sa}+j_{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_{sa} - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz \mathcal{S}_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_s}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{is}+j_{ik}-\mathbb{k}_1)}^{n_{is}+j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{ik}+j^{sa}-\mathbb{k}_2)}^{(n_{ik}+j^{sa}-\mathbb{k}_2)} \sum_{(n_s=n-j_i+1)}^{n_{sa}+j_i}$$

$$\frac{(n_i - n_{is})!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{sa} - n_{sa} - 1)!}{(n_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(n_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

GÜLDENWA

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-lk_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-j^{sa}-lk_2)!}{(n_{ik}+j_{ik}-n-lk_2-j^{sa})! \cdot (n+j_{sa}-s)!}$$

$$\frac{(j_s-l-1)!}{(j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D)}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j_s + j_{sa} - j_{sa}^{ik} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq l_s + s - n - 1 \wedge$$

$$D > n < n \wedge l = lk > 0$$

$$j_{sa} < j_{sa}^l - 1 \wedge j_{sa}^{lk_1} + j_{sa} - 1 < j_{sa}^{lk_2} - 1 \wedge j_{sa}^{lk_1} < j_{sa}^{lk_2} - 1 \wedge$$

$$s \in \{j_{sa}^s, \dots, lk_1, j_{sa}^{lk_2}, j_{sa}^{lk_1}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = j_{sa}^{lk_1} \wedge$$

$$lk_2 - 2 = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{lk}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s - j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(l_i-l+1)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDÜSÜZ

$$\begin{aligned}
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{ik} - 1)!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(n_s - l - 1)!}{(n_s - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s) \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\
& \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{()} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{()} \sum_{j_i = l_i + n - D}^{l_s + s - l} \\
& \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
& \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_{z=1}^{(j_{ik}-j_{sa}^{ik}+1)} = \sum_{k=l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}-j_{sa}}^{(l_s-j_{sa}-l)} \sum_{(j_i=l_i+n+j_{sa}-D-s)}^{(l_s-j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{j_s - l + 1} \frac{(j_s - k - l + 1)!}{(j_s - k - l + 1)!} \cdot \\
& \sum_{j_{ik}=j_{sa}^{sa}+1}^{j_{sa}^{sa}+j_{sa}^{sa}-l+1} \sum_{j_{sa}^{sa}=j_{sa}^{sa}-l+1}^{j_{sa}^{sa}+j_{sa}^{sa}-l+1} \sum_{j_{sa}^{sa}=j_{sa}^{sa}}^{j_{sa}^{sa}-j_{sa}^{sa}} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n_{is}-j_s+1)}^{(n_i-j_s+l_k)} \sum_{n_{is}+j_s-j_{ik}-k_1}^{n_{is}+j_s-j_{ik}-k_1} \\
& \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{ik}=n+k_2-j_{ik}+1} \sum_{n_{sa}+j_{ik}-j_{sa}^{sa}-k_2}^{n_{sa}+j_{sa}^{sa}-j_i} \\
& \sum_{(n_{sa}=n-j_{sa}^{sa}+1)}^{(n_{sa}=n-j_{sa}^{sa}+1)} \sum_{n_s=n-j_i+1}^{n_s=n-j_i+1} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa}^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa}^{sa} - 1)! \cdot (n_{sa} + j_{sa}^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot
\end{aligned}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_{ik}^{sa}+s-j_{sa}} \sum_{n_i=n+lk}^n \sum_{(n_{is}=n+lk-1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-k_1} \sum_{(n_{sa}=n_{ik}-j_s)}^{(\cdot)} \sum_{(j_{sa}-j_i)} \frac{(n_{ik}-j_{ik}-j_s-s-k_2)!}{(n_i+j_{ik}-n-k_1-j_{sa}^s)! \cdot (j_{sa}-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq 1 \wedge l_s \leq D - n - 1 \wedge$

$1 < j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_s \leq D + j_i + s - n - 1 \wedge$

$D > n < n \wedge I = k > 0 \wedge$

$j_{sa} \leq j_{sa}^i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^{i-1}, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{is}+1)}^{(n_{ik}+j_{ik}-)} \sum_{(n_{sa}=n_{is}+1)}^{(n_{sa}-j^{sa}-j_i)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}+1)!}$$

$$\frac{(n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-k_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l-s+1}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{is}=n+l_k-j_s+1)}} \sum_{\substack{n_{is}+j_s-j_{ik}-l_{k_1} \\ n_{ik}=n+l_{k_2}-j_{ik}+1}} \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k_2}) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_s - n_{sa} - j_i)!} \cdot \frac{(n_{sa} - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s - j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{\binom{()}{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik}}} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{is}=n+l_k-j_s+1)}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}}} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

GÜLDÜSÜZ

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i + n - D - s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
& \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l + 1)!}{(l_s - j_i - l + 1)! \cdot (l_s - j_i - l + 1)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - l + 1)! \cdot (j_{ik} - j_{sa} - j_{sa} + 1)!} \cdot \\
& \frac{(D - l_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)} \\
& \sum_{j_{ik} = j_s + j_{sa} - 1}^{j_{sa} - l - s + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa})}^{(j_{sa} - l - s + 1)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(j_{sa} - l - s + 1)} \\
& \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
& \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot
\end{aligned}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} - 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_s=l_i+n-D-s}^{l_s-1} \sum_{j_{ik}=j_s+l_{ik}-1}^{j_{sa}^{ik}-1} \sum_{j_{sa}^{ik}=j_{sa}-j_{sa}^{ik}}^{j_{sa}-j_{sa}^{ik}} \sum_{n+l_k}^n \sum_{n_{is}=n+l_k}^{n+l_k+j_s+1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{n+l_k+j_s+1} \sum_{n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2}}^{n+l_k+j_s+1} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{n+l_k+j_s+1} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > l_i \wedge n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_s = j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_i + j_{sa} - s + 1)} \sum_{j_{ik}=j_{sa} + j_{sa}^{ik} - j_{sa}}^{(l_i + n + j_{sa} - D)} \sum_{j_i=j_{sa} + s - j_{sa}}^{(n - j_s + 1)} \sum_{n_i=n+1}^{(n - j_s + 1)} \sum_{n_{is}=n+\mathbb{k}-1}^{(n - j_s + 1)} \sum_{n_{ik}=n+\mathbb{k}_2 - j_{ik} + 1}^{(n - j_s + 1)} \sum_{n_{sa}=n - j_{sa} + 1}^{(n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2)} \sum_{n_s=n - j_i + 1}^{(n_{sa} + j_{sa} - j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{lk_2}-s-l_{k_2})!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{lk_2})! \cdot (n_{ik}+j_{ik}-j_{sa}^{lk_2}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{lk} - j_{sa}^{ik} \leq j_{sa}^{lk} \leq j_i + j_{sa} - s \wedge a - j_{sa} \leq j_i \leq n \wedge$$

$$l_{k_1} - j_{sa}^{ik} + 1 > 0 \wedge l_{sa} + j_{sa}^{lk} - j_{sa}^{ik} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{lk} - n < l_{sa} \leq D + l_s + j_{sa}^{lk} - n - 1 \wedge$$

$$\geq n < l_{sa} \wedge l = l_k > 0$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$> 4 \wedge s + l_k \wedge$$

$$l_{k_2}: z = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \binom{(\quad)}{\sum_{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_{sa}+j^{sa}}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1) \cdot (n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \binom{(\quad)}{\sum_{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{sa}^{ik} - l_{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_{sa}+n-D)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\begin{aligned}
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - l + 1)!} \cdot \\
& \frac{(n - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=l}^{-l+1} \sum_{(j_s=2)}^{-l+1} \\
& \sum_{j_i=j^{sa}+j_s}^{-l+1} \sum_{(n_{is}=n+l_s-j_s-l+1)}^{-l+1} \sum_{j_i=j^{sa}+s-j_{sa}} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k-1} \\
& \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k-2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - l_{k1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k1})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot
\end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{()} \sum_{j_s=j_{sa}^{ik}+1}^{()} \sum_{j_{ik}=j_{sa}+j_s^{lk}}^{(j_{sa}=l_{sa}+n)} \sum_{j_i=j_{sa}+s-j_{sa}}^{(j_s+1)} \sum_{n_i=n+lk}^{(n+lk-j_s)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-lk_1}^{(n_{sa}=n_{ik}+lk-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}^{(n_{ik}+j_{ik}-j_s-s-lk_2)!} \frac{(n_{ik} + j_{ik} - j_s - s - lk_2)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\begin{aligned} & \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_s - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge \\ & D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge \\ & D \geq n < n \wedge l = lk > 0 \wedge \\ & j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge \\ & s: \{j_{sa}^s, \dots, lk_1, j_{sa}^{ik}, lk_2, j_{sa}, \dots, j_{sa}^i\} \wedge \end{aligned}$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+j_{sa}^{ik}-l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{j_i=l_s+j_s-j_{sa}}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{ik})}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

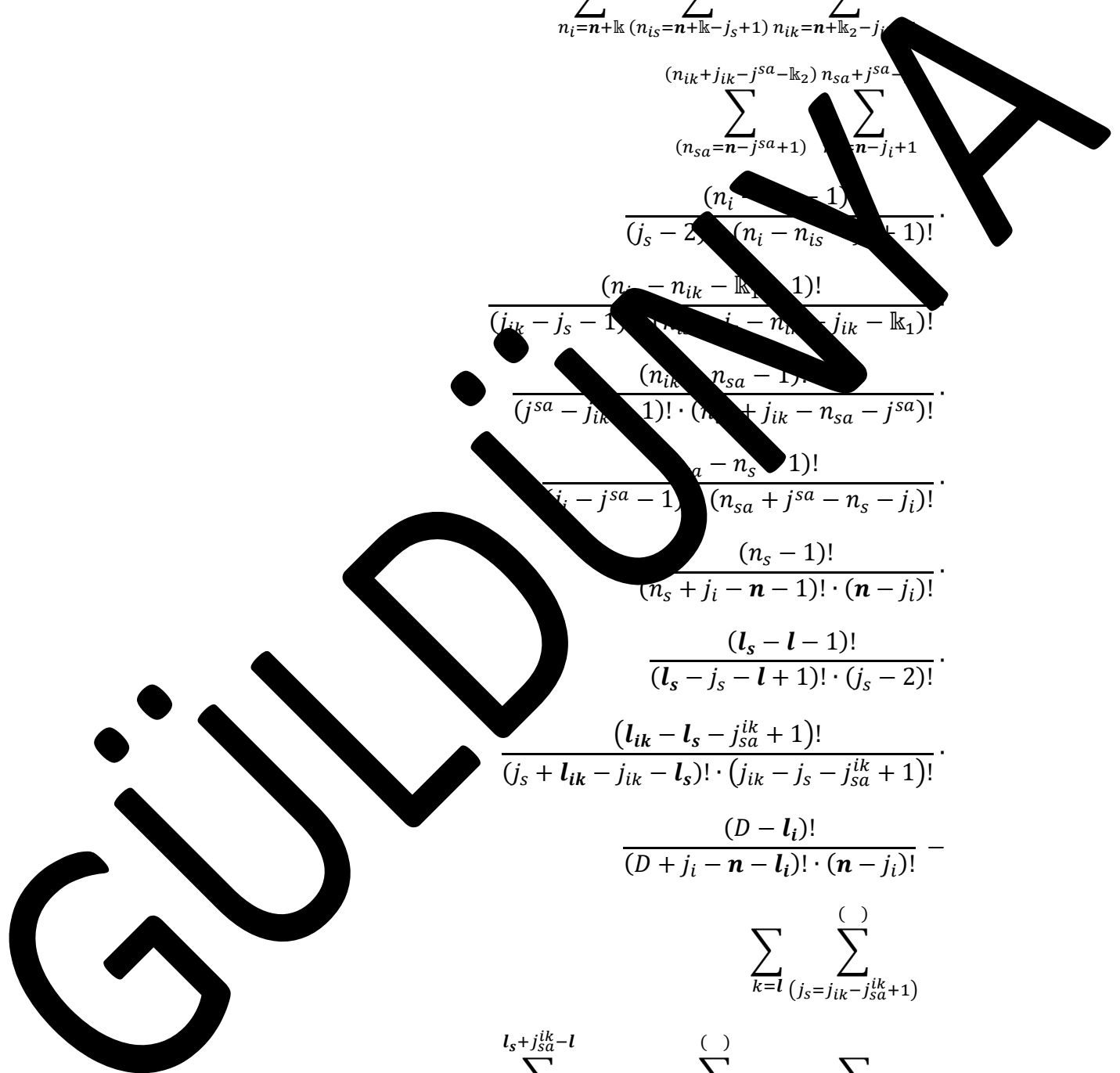
$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_s+j_{sa}^{ik}-l-j_{sa}+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)!(n_i-n_{ik}-j_{ik}-k_1)!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} -
 \end{aligned}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_s+n+j_{sa}^{ik}-D-j_{sa}}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}
 \end{aligned}$$



$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-l)!} \cdot \frac{(D-l)}{(D+j_i-n-l)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^s < j_{sa} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + 1 \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{sa}+n+j_{sa}^{ik}-D-j_{sa}}^{l_{sa}+j_{sa}^{ik}-l-j_{sa}+1} \sum_{()} \sum_{j_i=j^{sa}+s-j_{sa}} (j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{(n_{sa}=n-j^{sa}+1) n_s=n-j_i+1}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - l_s) \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D + l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{l_s-l-1} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)}^{(l_s-l-1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{sa}+j_{ik}-l-j_{sa}+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(l_s-l-1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_s+l_{ik}-j_{ik}-j_{sa}^{ik}+1} \sum_{j_s=j_s+j_{sa}^{ik}-1}^{j_s+l_{ik}-j_{ik}-j_{sa}^{ik}-1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{(n_i-l_i-1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik}-k_2}^{(n_{sa}-n_{ik}+j_{ik}-j_{sa}^{ik}-k_2)} \sum_{n_s=n_{sa}+j_{sa}^{ik}-j_i}^{(n_s-n_{sa}+j_{sa}^{ik}-j_i)} \cdot \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D > n > l \neq i, l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$

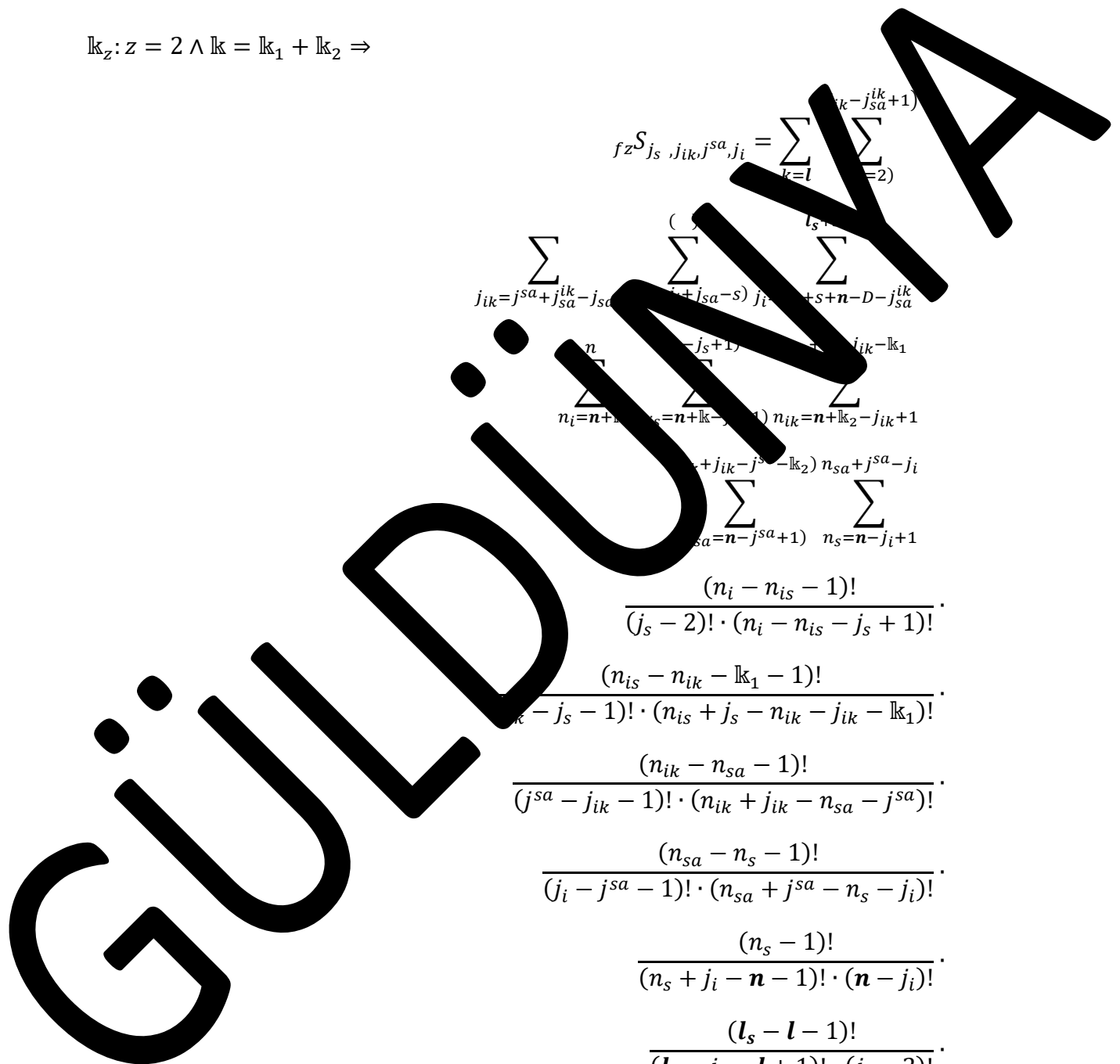
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{\dots} \sum_{l=2}^{\dots} \dots \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{\dots} \sum_{j_i=j_{sa}-s}^{\dots} \sum_{j_i=s+n-D-j_{sa}^{ik}}^{\dots} \dots \sum_{n_i=n+\dots}^{\dots} \sum_{n_{is}=n+\mathbb{k}_1-j_{sa}^{ik}}^{\dots} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{\dots} \dots \sum_{j_{sa}=n-j_{sa}^{ik}+1}^{\dots} \sum_{n_s=n-j_i+1}^{\dots} \dots \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \dots \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \dots \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \dots \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \dots \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \dots \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \dots \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \dots \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$



$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j^{sa}=j_i+j_{sa}-s)} \sum_{(j_s=2)}^{(l_s-l+1)} \sum_{j_i=l_s+s-l+1}^{l_{ik}+s-l-j_{sa}^{ik}+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\sum_{(n_{sa}=n+l_k-j_s+1)}^{(n_{ik}+j_{ik}-l_k)} \sum_{(n_s=n-j_i)}^{(n_{sa}=n+l_k-j_s+1)} \sum_{(n_s=n-j_i)}^{(n_{sa}=n+l_k-j_s+1)}$$

$$\frac{(n_i - n_{ik} - 1)!}{(j_s - 2)! \cdot (n_{ik} - j_s + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(j_s=j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(j^{sa}=j_i+j_{sa}-s)} \sum_{(j_s=2)}^{(l_s-l+1)} \sum_{j_i=l_{ik}+s+n-D-j_{sa}^{ik}}^{l_s+s-l}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{ik}$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s = l_s \wedge$

$D + j_{sa}^{ik} - n < l_{ik} \leq D + j_{sa}^{ik} - n = l_{sa} + j_{sa}^{ik} - n = l_{sa} + l_{sa} - n = l_s$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$

$s \in \{j_{sa}^s, \dots, \mathbb{k}_1 - j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^s, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k}$

$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-l_{k_1})!} \cdot \\
 & \frac{(n_s-1)!}{(n_{is}+j_s-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-j_{ik}-j_{sa}^{ik}+1)!}{(j_s+l_{k_1}-j_{ik}-l_{k_1})! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_s+j_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_{k_1}}^n \sum_{(n_{is}=n+l_{k_1}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l - 1)!}{(l_s - j_i - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j^{ik} + 1)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(s+j_{sa}-l)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{(s+j_{sa}-l)} \sum_{j_{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik}}^{(s+j_{sa}-l)} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{sa}^{ik}, j_i = \sum_{k=l}^{j_{ik}-j_{sa}^{ik}+1} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l}^{(l_s+j_{sa}^{ik}-l)} \sum_{(j_{sa}=n-D+(j_{sa}^{ik}-k+j_{sa}-j_{sa}^{ik}))}^{(j_{sa}=n-D+(j_{sa}^{ik}-k+j_{sa}-j_{sa}^{ik}))} \sum_{j_i=j^{sa}+s-j_{sa}}^{(j_i=j^{sa}+s-j_{sa})}$$

$$\sum_{i=n+\mathbb{k}}^n \sum_{(n_i=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{is}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=1}^{l_s - l + 1} \sum_{j_s=2}^{l_s - l + 1} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{j_{sa}=j_{ik} + j_{sa} - j_s}^{l_s - l + 1} \sum_{j_i=j_{sa} + s - j_{sa}}^{l_s - l + 1} \\
 & \sum_{n_i=n - j_s + 1}^n \sum_{n_{is}=n + k_1 - 1}^{n - j_s + 1} \sum_{n_{ik}=n + k_2 - j_{ik} + 1}^{n - j_s + 1} \sum_{n_{sa}=n - j_{sa} + 1}^{n - j_s + 1} \sum_{n_s=n - j_i + 1}^{n - j_s + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDÜNYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j_{sa}+s-1}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2})! \cdot (n_{is}-j_{ik}+l_{k1})! \cdot (n_{sa}-j_{sa}^{ik})! \cdot (n_s-j_{sa}^{ik})! \cdot (l_s-l-1)! \cdot (l_s-j_s+1)! \cdot (j_s-2)! \cdot (D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \geq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq l_{ik} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_i - 1 \wedge j_{sa} - 1 \leq j_{sa} < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$k_2 \leq 4 \wedge k_2 = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=2)}^{(l_{ik}+n-D-j_{sa}^{ik})}$$

$$\begin{aligned}
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n_{sa}+j^{sa}-n-j_i+1)} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j^{sa}-j_{ik}-1)!(n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +
 \end{aligned}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - \mathbb{k}_2)!} \cdot \\
 & \frac{(n_s - 1)!}{(n - j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{sa}^{ik} - l_{ik} - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{()} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}^{(n_i-j_s+1)} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2$$

$$fz \mathcal{S}_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_i+n-D}^{()} \sum_{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot$$

$$\frac{(l_{ik} - l_s - j_s - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j_s - 1)! \cdot (j_{ik} - j_s - l_s + 1)!} \cdot$$

$$\frac{(D - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!} \cdot$$

$$\sum_{j_{ik}=j_{ik}^{ik+1}}^{\sum_{j_s=j_{ik}-j_{sa}^{ik+1}}}$$

$$\sum_{j_{ik}=j_{ik}^{ik+1}} \sum_{j_{sa}=j_i+j_{sa}-s}^{()} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\sum_{j_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j^{sa})! \cdot (n + j^{sa} - j_s - s)!} \cdot$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i \wedge l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\sum_{j_i=j^{sa}+s-j_{sa}}^{l_{ik}-j_{sa}^{ik}} \sum_{j_s=2}^{(l_s-l)} \sum_{j_{ik}=l_{ik}+n-D}^{n} \sum_{n_i=n+\mathbb{k}}^{(n_i-1)} \sum_{n_{is}=n+\mathbb{k}-j_s+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_{ik}+n-D-j_{sa}^{ik}+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j_{sa}=j_i+j_{sa}-j_{sa})}^{()} \sum_{(j_{sa}=j_i+j_{sa}-j_{sa})}^{()}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i=n+k)}^{(n_i-j_s+1)} \sum_{(n_i=n+k)}^{(n_i-j_s+1)}$$

$$\sum_{(n_{sa}=n_i-j_{ik}-j_{sa})}^{()} \sum_{(n_s=n_{sa}+j_{sa}-j_i)}^{()}$$

$$\frac{(n_{ik} + j_{ik} - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - \mathbb{k}_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_s \leq D - n - 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + l_s + s - n - 1 < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_i+j_{sa}^{ik}-l-s+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=n-j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik}+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik}-1)}^{n_{is}+j_s-\mathbb{k}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{ik})! \cdot (n_{sa}+j^{sa}-j_i)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}$$

GÜLDENYA

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - 1)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^{lk})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s < j_{sa}^{lk} - 1 \leq j_{ik} - j_{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{lk} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 > l_s \wedge l_{sa} + j_{sa}^{lk} - j_{sa} - l_{ik} \wedge l_{sa} + j_{sa} - s = l_{sa} \wedge$$

$$l_{sa} - j_{sa} - n - l_{sa} \leq D - n - l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = l_{sa} = 0 \wedge$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, lk_1, j_{sa}^{lk}, lk_2, \dots, j_{sa}^i\} \wedge$$

$$s \geq 4 \wedge j_{sa}^s = s + lk \wedge$$

$$lk_z: z = 2, \dots, k = lk_1 + lk_2 \Rightarrow$$

$$f^z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{(\quad)}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_{sa}+s-l-j_{sa}+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n+l_{k_2}-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{\binom{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})}{n_{sa}=n-j^{sa}+1}} \sum_{\binom{(n_{sa}+j^{sa})}{n-j_i+1}} \\
 & \frac{\binom{(n_i-1)}{(j_s-2)!(n_i-n_{is}+1)!}}{\binom{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_{is}-n_{ik}-j_{ik}-l_{k_1})!}} \\
 & \frac{\binom{(n_{ik}-n_{sa}-1)}{(j^{sa}-j_{ik}-1)!(n_{is}+j_{ik}-n_{sa}-j^{sa})!}}{\binom{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!}} \\
 & \frac{\binom{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}}{\binom{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}} \\
 & \frac{\binom{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}}{\binom{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}}
 \end{aligned}$$

$$\sum_{k=l}^{\binom{(\quad)}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{(\quad)}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_{sa}+s-l-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - l_{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq l_i$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_i + j_{sa} - s \wedge l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 = \dots$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - j_{ik} - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j_i - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa} - l_s) \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{()} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{lk} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = l_{sa} + n - D)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENWA

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_{z=2}^{j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{sa}+n+1}^{(l_{sa}+n+1-l-j_{sa}^{ik})} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{l=1}^{j_s} \sum_{j_s=j_{ik}-j_{sa}^{ik}}$$

$$\sum_{j_{sa}=n+j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n+l_k}^n \sum_{(n_{is}=n+j_s+1)}^{j_s+1} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k2})} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D + n - 1 \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(l_s - l + 1)} \sum_{j_s=2}^{l_s - l + 1} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(j_s + j_{sa} - s)} \sum_{j_i=n+s-D-j_{sa}^{ik}}^{l_{ik}+s-1} \sum_{n_i=n+1}^{n-j_s+1} \sum_{n_{is}=n+\mathbb{k}-j_{sa}+1}^{n-j_s+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n-j_s+1} \sum_{n_{sa}=n-j_{sa}+1}^{n+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜNYA

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{ik}+s+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik}-k_2)}^{()} \sum_{n_s=n_{sa}+j_{sa}^{is}}$$

$$\frac{(n_{ik}+j_{ik}-n-k_2) \dots (n_{ik}+j_{ik}-n-k_2-s+1)}{(n_{ik}+j_{ik}-n-k_2) \dots (n_{ik}+j_{ik}-n-k_2-s+1)} \cdot \frac{(j_{sa}^{is})! \dots (j_{sa}^{is}-s+1)!}{(j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-k_1+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s = D - n + 1 \wedge$

$D + l_s + s - n - l_i + 1 \leq l \leq \dots - 1 \wedge$

$1 \leq j_{ik} - j_{sa}^{ik} + \dots \wedge j_s + j_{sa}^{ik} - 1 \dots \geq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \dots \leq j_i - j_{sa} - s \dots + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge \dots + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$\dots + j_{sa}^{ik} - \dots < l_{ik} \leq D \dots l_s + j_{sa}^{ik} - n - 1 \wedge$

$D \geq \dots < n \wedge l \dots \wedge$

$j_{sa} \leq j_{sa}^i \dots \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$\{j_{sa}^s, \dots, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$fz_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-l_{k_1})}$$

$$\sum_{(n_{sa}=n+l_k-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa})} \sum_{(n_s=n-l)}^{(n_{sa}-j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_{ik}+n+j_{sa}-D-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDÜZMAYA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_i=j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$D + l_s + s - n - l_i + 1 \leq l \leq i - 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{sa} + j_{sa}^{ik} - 1 \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + j_{sa}^{ik} - 1 \leq j_i \leq$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa} - j_{sa}^{ik} = l_{ik} - l_i + j_{sa} - l_{sa} \wedge$

$D + j_{sa}^{ik} - n < l_{ik} \leq D + l_s + j_{sa}^{ik} - n - 1 \wedge$

$D \geq n < n \wedge l = i > 0 \wedge$

$j_s \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa}^l - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}^l, \dots, j_{sa}^s\}$

$s > 4 \wedge l = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge l = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{\binom{()}{j_i=j^{sa}+s-j_{sa}}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{\binom{()}{n_s=n_{sa}+j^{sa}-j_i}}$$

GÜLDÜŞMAYA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=s+1}^{l_{ik}+j_{sa}^{ik}-l-s+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa}^{lk} - j_{sa}^{lk} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_{sa} - l_{sa} - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{sa} + 1)}^{(l_{sa} - l + 1)} \sum_{j_i = l_{ik} + j_{sa}^{ik} - l - s + 2}^{l_i - l + 1}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{j_{sa}^{ik} = j_{sa}^{ik} - j_{sa}}^{()} \sum_{j_i = j_i + j_{sa} - s}^{()} \sum_{j_i = s + 1}^{l_{ik} + j_{sa}^{ik} - l - s + 1} \\
& \sum_{n_{is} = n + l_k - j_s + 1}^{(n_i - l_i - 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - l_{k_1}} \\
& \sum_{n_{sa} = n_{ik} + j_{ik} - j^{sa} - l_{k_2}}^{()} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$n - l \neq l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{l=1}^{()} \sum_{(j_s=j_{ik}+j_{sa}+1)}^{()} \sum_{(j_i+j_{sa}-s)}^{()} \sum_{(j_{ik}+1)}^{()} \sum_{(j_{sa}+1)}^{()} \sum_{(j_i-s+1)}^{()} \sum_{(j_{ik}-k_1)}^{()} \sum_{(n_i=n+1)}^{()} \sum_{(n_{is}=n+k-j_{sa})}^{()} \sum_{(n_{ik}=n+k_2-j_{ik}+1)}^{()} \sum_{(n_{sa}+j_{sa}-j_i)}^{()} \sum_{(n_{sa}=n-j_{sa}+1)}^{()} \sum_{(n_s=n-j_i+1)}^{()} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(k - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜZMAYA

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j_{sa}^{ik} + 1}^{l_s + j_{sa}^{ik} - l} \sum_{(j^{sa} = j_{sa} - l + 1)}^{(l_{sa} - l + 1)}$$

$$\sum_{n_i = n + \mathbb{k}_1}^n \sum_{(n_i - j_s + \dots)}^{(n_i - j_s + \dots)} \sum_{(n_{is} + j_s - j_{ik})}^{(n_{is} + j_s - j_{ik})}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - \dots)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - \dots - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜŞÜMÜSÜ

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=s}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}^{()}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j_{sa}}^{()}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa})! \cdot (n_{is}-j_{is}-j_s-s)!}{(n_{ik}-j_{ik}-n-k_2-j_{sa})! \cdot (n_{is}-j_{is}-j_s-s)! \cdot (l_s-l-1)!}$$

$$\frac{(l_s-j_s-k_1+1)! \cdot (j_s-2)!}{(D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_{sa}^{ik} \leq j_i + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k_1 + 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s^s, \dots, k_1, j_{sa}^s, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k: z = 2, k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa}=j_{sa}+1)}^{(l_{ik}+j_{sa}^{ik}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_s-j_i}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-k_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j_{sa}=l_{ik}+j_{sa}^{ik}-l-s+2)}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - l_{k_1} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} + j_s - j_{i_k} - l_{k_1})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} + j_{i_k} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j_i - j^{s_a} - 1)! \cdot (n_{s_a} + j_i - n - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})^{j^{s_a} - l_{i_k}} \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
 & \frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} + l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{\binom{D}{j_s}} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{\binom{D}{j_s}} \\
 & \sum_{j_{i_k}=j^{s_a}+j_{s_a}^{i_k}-j_{s_a}}^{(l_{i_k}+j_{s_a}^{i_k}-l-s+1)} \sum_{(j^{s_a}=j_{s_a}+1)} \sum_{j_i=j^{s_a}+s-j_{s_a}}
 \end{aligned}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

GÜLDÜŞMAYA

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \binom{(\quad)}{\quad}}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_s - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

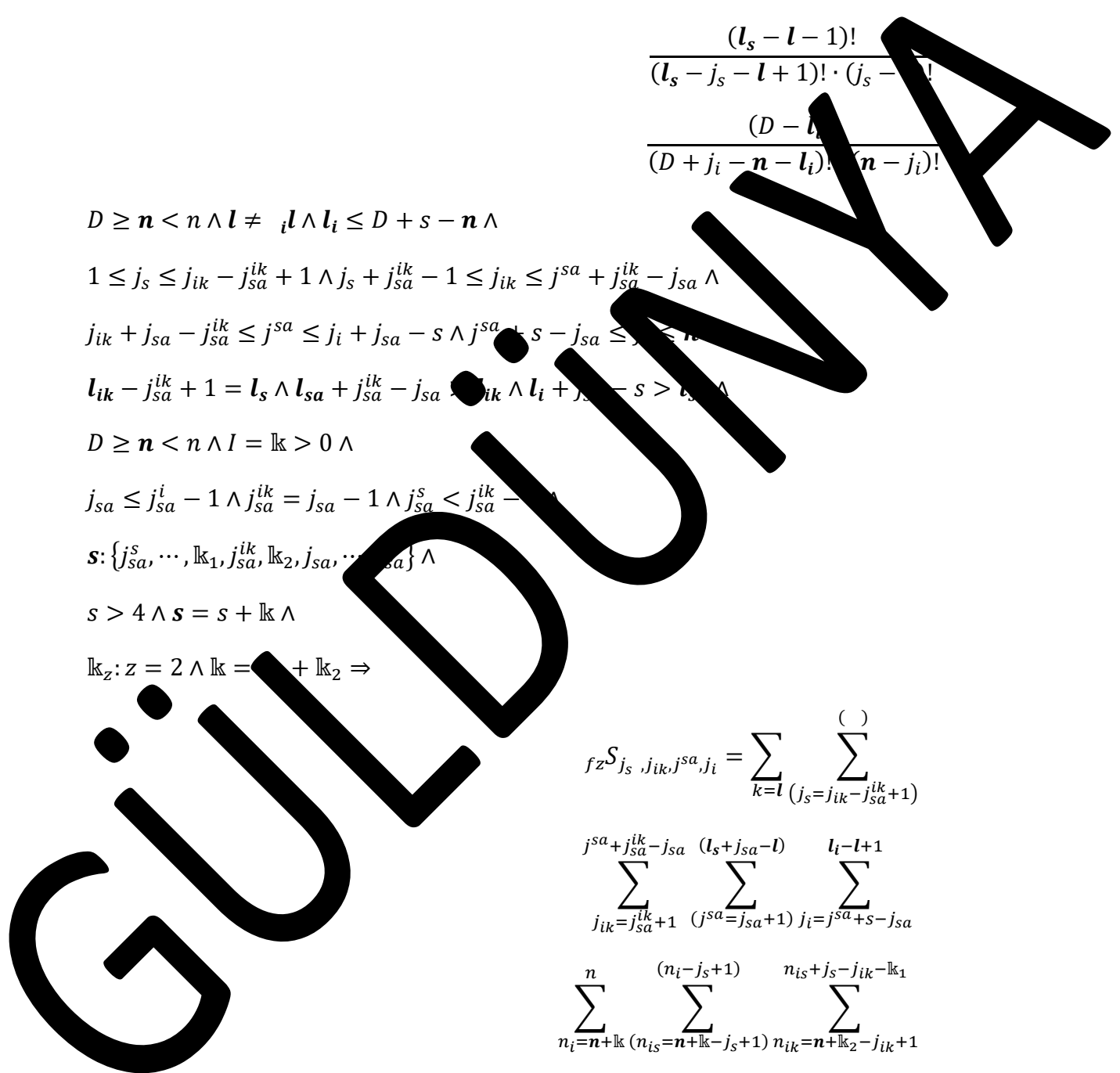
$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)} \binom{(\quad)}{\quad} \sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} (n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$



$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_{sa} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_i - l_{sa} - 1)!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D + l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

GÜLDÜZMAYA

$$\begin{aligned}
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa})!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!} \cdot \\
& \frac{(D - l_i)!}{(n - l_i) \cdot (n - j_i)!} \cdot \\
& \sum_{j_{ik}=j}^n \sum_{j_{sa}=j_{sa}+1}^{l_s+j_{sa}-l} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_s-j_{ik}+1} \\
& \sum_{i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_i-j_s+1)} \\
& \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
\end{aligned}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{j_s} \binom{j_s}{k} \binom{l_{ik}-l+1}{j_{sa}^{ik}+1} \binom{l_{sa}-l+1}{j_{sa}^{ik}+j_{sa}-j_s} \binom{l_i-l+1}{j_{sa}^i+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \binom{n_i-j_s}{n_i-k-j_s+1} \binom{n_{is}+j_s-j_{ik}-k_1}{n_{is}+j_s-j_{ik}-k_1} \binom{n_{sa}+j_{sa}-j_i}{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa}^{ik} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j_{sa}^{lk} + 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik} - j_{sa}^{lk} - j_{sa})}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_i - j_s + 1)} \sum_{(n_{ik} = \dots + j_s - j_{ik} - \mathbb{k}_1)}$$

$$\sum_{(n_{sa} = \dots + j_{ik} - j_{sa}^{lk} - \dots)} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}$$

$$\frac{(n_{ik} + j_{ik} - \dots - s - \mathbb{k}_2)!}{(\dots + j_{ik} - \dots - \mathbb{k}_2 - \dots)! \cdot (n + j^{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l = l \wedge l_i = D + s - l \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + \dots + j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq \dots + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 = l_s - j_{sa}^{lk} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$\dots \wedge j_i = 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\frac{(n_{ik}+j_{ik}-j_s-1)! \cdot (n_{sa}+j_{sa}-j_i-1)!}{(j_s-2)! \cdot (n_{is}+1)!}$$

$$\frac{(n_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-l_{k_1}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(n_{sa}-j_s-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n_s=l_{k_2}+j_{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (n+j_{sa}^{ik}-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l)!}{(D+l_s-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_i \leq D + s - n$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} - j_{sa} - s > l_{sa} \wedge$

$D \geq n < n \wedge l = l_{k_1} = 0 \wedge$

$j_s \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} < j_{sa}^{ik} - 1 \wedge$

$s: \{ \dots, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik} \}$

$> 4 \wedge l_{k_1} = s + l_{k_1} \wedge$

$l_{k_2}: z = 2 \wedge l_{k_2} = l_{k_2} = 2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}^{(l_{ik}-l-j_{sa}^{ik}+2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}} \\
 & \sum_{n_{s_a}=n-j^{s_a}+1}^{(n_{i_k}+j_{i_k}-j^{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j^{s_a}-j_i} \\
 & \frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!} \cdot \\
 & \frac{(n_{i_s} - n_{i_k} - l_{k_1} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} + j_s - j_{i_k} - l_{k_1})!} \cdot \\
 & \frac{(n_{i_k} - n_{i_s} - 1)!}{(j^{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} + j_{i_k} - n_{s_a} - j^{s_a})!} \cdot \\
 & \frac{(n_{s_a} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{s_a} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a})^{j^{s_a} - l_{i_k}} \cdot (j^{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!} \cdot \\
 & \frac{(l_i + j_{s_a} - l_{s_a} - s)!}{(j^{s_a} + l_i - j_i - l_{s_a})! \cdot (j_i + j_{s_a} - j^{s_a} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_{i_k} - l - j_{s_a}^{i_k} + 2)} \sum_{(j_s=2)} \\
 & \sum_{j_{i_k}=j_s+j_{s_a}^{i_k}-1} \sum_{(j^{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})} \sum_{j_i=j^{s_a}+s-j_{s_a}} \\
 & \sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}
 \end{aligned}$$

GÜLDÜŞMAYA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 1)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_s - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_s-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{l_i-l+1} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa}^{ik})!}{(j_{ik} + l_{sa} - j^{sa})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_i - l_{sa} - j^{sa})!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{\binom{()}{j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik}}} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDÜZMAYA

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{\dots} \sum_{j_i=l_i+n-D}^{\dots} \sum_{j_{sa}=j_{sa}^{ik}+1}^{\dots} \sum_{j_{sa}=n-j_{sa}^{ik}+1}^{\dots} \sum_{j_{sa}=n-j_{sa}^{ik}+1}^{\dots} \sum_{j_i=l_i+n-D}^{\dots} \sum_{j_i=l_i+n-D}^{\dots} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{(n_{sa}=n-j_{sa}^{ik}+1)}^{(n_{ik}+j_{ik}-j_{sa}^{ik}-k_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{sa}^{ik}-j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \\
 & \frac{(l_i - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{j_{sa}^{ik}=j_{sa}^{ik}+1}^{l_{ik}-l} \sum_{j_{sa}^{ik}=j_{sa}^{ik}+1}^{(l_{sa}-l)} \sum_{j_i=l_{ik}+s-l-j_{sa}^{ik}+2}^{l_i-l+1} \sum_{n_i=n+l_k}^n \sum_{n_{is}=n+l_k-j_s+1}^{(n_{is}+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \sum_{n_{sa}=n-j_{sa}^{ik}+1}^{n_{sa}+j_{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{\binom{()}{()}} \sum_{j_s=j_{ik}+j_{sa}^{ik}+1}^{l_{ik}+s-j_{ik}+1} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}}^{j_{sa}=j_i+j_{sa}-s} \sum_{j_i=l_i+n-D}^{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \sum_{n_i=n+k_1}^{n+k_1-j_s} \sum_{n_{sa}=n_{is}-j_{sa}-k_2}^{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - j_s - s - k_2)! \cdot (n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa}^s + s - j_{sa} \leq j_i \leq n \wedge$$

$$j_{sa} - j_{sa}^{ik} = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S j_s, j_{ik}, j^{sa}, j_i = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(j_i+j_{sa}-s)} \sum_{(l_i+n-D)}^{(l_s+s-l)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{is}+j_s-n-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_s+s-l}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \frac{(n_{ik}+j_{ik}-j_s-1)! \cdot (n_{sa}-j_s-j_i)!}{(n_{sa}=n_{is}+j_s+1) \cdot (n_s=n-j_i)} \\
 & \frac{(n_s - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)}
 \end{aligned}$$

GÜLDENWA

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_s+s-l}^{j_i=l_i+n-D}$$

$$\sum_{n_i=n+l_k}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+l_k-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}}} \sum_{n_s=n_{ik}+j_{sa}-j_i}$$

$$\frac{(n_{ik}+j_{ik}-j_s-j_{sa}-l_{k_2})!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa})! \cdot (n+j_{sa}-s)!}$$

$$\frac{(j_s-l-1)!}{(j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(D)}{(D+j_s-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik} - 1 < j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_s \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{ik} + j_{sa} - s \wedge j^{sa} - j_{sa} - s \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \wedge$

$D + s - n < l_i \leq l_i + l_s + s - n - 1 \wedge$

$D > n < n \wedge l = l_k > 0$

$j_{sa} < j_{sa}^i - 1 \wedge j_{sa}^{l_{k_1}} - j_{sa} - 1 < j_{sa}^{l_{k_2}} - 1 \wedge$

$s; \{j_{sa}^s, l_{k_1}, j_{sa}^{l_{k_2}}, j_{sa}^{l_{k_2}}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = j_{sa} - l_{k_1} \wedge$

$l_{k_2} = 2 \wedge l_k = l_{k_1} + l_{k_2} \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j^{sa}=l_{sa}+n-D}} \sum_{l_i=l_i+1}^{l_i+n+j_{sa}-D-s-1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(j_i + j_i - n_s - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa})^{j^{sa} - l_{ik}} \cdot (j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

GÜLDEN

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} n_{sa}+j^{sa}-j_i}{\sum_{n_s=n-j_i+1}} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{ik}+j_{sa}-l-j_{sa}^{ik}+2)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} n_{sa}+j^{sa}-j_i \sum_{n_s=n-j_i+1}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(j_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j_{sa} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(j_i + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{ik}+j_{sa}-l-j_{sa}^{ik}+1)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

GÜLDENWA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z^S(j_s, j_{ik}, j_i) = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_i+n+j_{sa}-D-s-1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

GÜLDÜNYA

$$\begin{aligned}
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa})!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!} \cdot \\
 & \frac{(l_i - l)!}{(n - l)! \cdot (n - j_i)!} \cdot \\
 & \sum_{j_s = j_{ik} - j_{sa}^{ik} + 1}^{j_s = j_{sa}^{ik} - j_{sa}} \sum_{j_i = j^{sa} + s - j_{sa}}^{j_i = n + j_{sa} - D - s} \sum_{n_i = n + \mathbb{k}}^n \sum_{n_{is} = n + \mathbb{k} - j_s + 1}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{n_{sa} = n - j^{sa} + 1}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

GÜLDENMYA

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - l_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{j_s = j_{ik} - j_{sa}^{l_i}}^{l_s + j_{sa}^{l_i} - l + 1} \sum_{j_i = j^{sa} - l_{sa} - l + 1}^{l_i - l + 1} \sum_{n_{is} = n - j_s + 1}^n \sum_{n_{ik} = n + l_{k_2} - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - l_{k_1}} \sum_{n_{sa} = n - j^{sa} + 1}^{l_{k_1} + j_{ik} - j^{sa} - l_{k_2}} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot
 \end{aligned}$$

GÜLDÜZYA

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + \dots)}$$

$$\sum_{j_{ik} = j^{sa} + j_{sa}^{lk} - j_{sa}}^{(l_s + j_{sa} - l)} \sum_{(j^{sa} = l_i + n + j_{sa} - l_s - j_{sa} - j_{ik} - l_s)}$$

$$\sum_{n_i = n + \mathbb{k}}^n \sum_{(n_i - j_s + 1)} \sum_{(n_{ik} = \dots + j_s - j_{ik} - \mathbb{k}_1)}$$

$$\sum_{(n_{sa} = \dots + j_{ik} - j_{sa}^{lk})} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}$$

$$\frac{(n_{ik} + j_{ik} - \dots - s - \mathbb{k}_2)!}{(\dots + j_{ik} - \dots - \mathbb{k}_2 - \dots)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i \leq l \wedge l_s \leq D - n - 2 \wedge$$

$$1 \leq j_i \leq j_{ik} - j_{sa}^{ik} + \dots \wedge j_s + j_{sa} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq \dots + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{ik} + 1 = l_s - j_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n - l_i \leq D + l_s + s - n - 1 \wedge$$

$$\dots \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-l}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{is}+j_{ik}-\mathbb{k}_1)}^{(n_{is}+j_{ik}-\mathbb{k}_1)}$$

$$\sum_{(n_{ik}+j^{sa}-\mathbb{k}_2)}^{(n_{ik}+j^{sa}-\mathbb{k}_2)} \sum_{(n_{sa}+j_i)}^{(n_{sa}+j_i)}$$

$$\sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)}$$

$$\frac{(n_i - n_{is})}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - j_{ik} - \mathbb{k}_1 + 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{ik} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_s - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

GÜLDÜZMİNAR

$$\begin{aligned}
 & \sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})}^{(l_{sa} - l + 1)} \sum_{j_i = j_{sa} + s - j_{sa}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} - l_{k_1}}^{n_{is} + j_s - j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n - j_{sa} + 1)}^{(n_{ik} + j_{ik} - j_{sa} - k_2)} \sum_{(n - j_i + 1)}^{n_{sa} + j_{sa}} \\
 & \frac{(n_i - 1)!}{(j_s - 2)! (n_i - n_{is} + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! (n_{is} - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! (n_{is} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{\binom{()}{}} \sum_{(j_s = j_{ik} - j_{sa}^{lk} + 1)}^{\binom{()}{}}
 \end{aligned}$$

$$\sum_{j_{ik} = l_i + n + j_{sa}^{lk} - D - s}^{l_{ik} - l + 1} \sum_{(j_{sa} = j_{ik} + j_{sa} - j_{sa}^{lk})}^{\binom{()}{}} \sum_{j_i = j_{sa} + s - j_{sa}}^{\binom{()}{}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_i > l_{ik} \wedge l_{sa} + j_{sa} - s > l_i \wedge$$

$$D + s - n < l_i \leq D + l_s + j_{sa}^{ik} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \dots, \mathbb{k}_1 - j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k}$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$$

$$fz S_{j_s, j_{ik} j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_s+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n-j_i-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{lk}-l_{ik}-j_{sa})!}{(l_{sa}+j_{sa}^{lk}-l_{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{lk}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}-l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{lk}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_s+j_{sa}^{lk}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l - 1)!}{(n - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j^{sa} - l_{ik} - j^{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (l_{sa} + j^{sa} - j_{ik} - j^{sa})!} \cdot \\
 & \frac{(l_i + l_{sa} - l_{sa} - s)!}{(j_i + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned} f_z S_{j_s, j_{sa}^{sa}, j_i} &= \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)} \\ &\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j_{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{j_i=l_i+n-D} \\ &\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\ &\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \\ &\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ &\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\ &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ &\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \end{aligned}$$

$$\begin{aligned}
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!} \cdot \\
 & \frac{(l_i - 1)!}{(D + j_i - n - l_i)! \cdot (j_i)!} + \\
 & \sum_{k=1}^{(l_{ik} - l - j_{sa}^{lk} + 2)} \sum_{j=0}^{D-s+1} \frac{(l_{sa} - k - 1)!}{(j_s + j_{sa}^{lk} - 1)!} \frac{(l_i - l + 1)!}{(j_{sa} + j_{sa}^{lk} + j_{sa} - j_{sa}^{lk})!} \frac{(l_i - l + 1)!}{(j_i = j_{sa} + s - j_{sa})!} \\
 & \sum_{n_i = n + k}^{(n - j_s + 1)} \sum_{(n_{is} = n + k - j_s + 1)}^{(n - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - k_1} \frac{(n_{ik} + j_{ik} - j_{sa} - k_2)!}{(n_{sa} = n - j_{sa} + 1)!} \frac{n_{sa} + j_{sa} - j_i}{n_s = n - j_i + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{i=l_i+n-s+1}^{(l_{ik} - j_{sa}^{ik} + 2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}} \sum_{j_{sa}=j_{ik}+j_{sa}-j_s} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k} \sum_{n_i=n+l_k-j_s} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - j_s - s - k_2)! \cdot (n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - j_{sa}^{ik} - l = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-1}^{n_{is}+j_s-\mathbb{k}-\mathbb{k}_1}$$

$$\sum_{j_i=n-j^{sa}+1}^{(n_{ik}+j_{ik}-j_s-\mathbb{k}_2)} \sum_{j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i-l+1)} \sum_{j_i=j^{sa}+s-j}^{(l_i-l+1)} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \frac{(n_{ik}+j_{ik})! \cdot (n_{sa}+j_{sa}-j_i)!}{(n_{sa}-j_{sa}+1)! \cdot (n_s-n-j_i)!} \\
 & \frac{(n_i-n_{ik}-1)!}{(j_s-2)! \cdot (n_{is}+j_s+1)!} \\
 & \frac{(n_{is}-n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-k_1)!} \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j^{sa}-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}
 \end{aligned}$$

GÜLDENWA

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1} \sum_{\binom{()}{j_{sa}=j_{ik}+j_{sa}-j_{sa}^{lk}}} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+lk}^n \sum_{\binom{()}{n_{is}=n+lk-j_s+1}}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2}}^{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-lk_2)} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - lk_2 - j_{sa}^{lk})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$D + l_s + s - n - l_i + 1 \leq l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{lk} + 1 \wedge j_s < j_{sa}^{lk} - 1 \leq j_{ik} - j_{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{lk} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{lk} + 1 = l_s \wedge l_{sa} + j_{sa}^{lk} - j_{sa} - l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \wedge$$

$$l_s - n < l_s \leq D + l_s - n - 1 \wedge$$

$$D \geq n < n \wedge l = 0 \wedge$$

$$j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{lk} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, lk_1, \dots, lk_2, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge j_{sa}^s = s + lk \wedge$$

$$lk_z: z = 2 \wedge lk = lk_1 + lk_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{\binom{()}{j_s=j_{ik}-j_{sa}^{lk}+1}}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1) \cdot (n_{is}-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(l_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\quad)} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\quad)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\quad)} \sum_{j_i=l_i+n-D}^{l_{ik}+s-l-j_{sa}^{ik}+1}
 \end{aligned}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} (n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)! \cdot (n + j^{sa} - j_s - s)! \cdot \frac{(l_s - l - 1)! \cdot (l - 2)!}{(l_s - j_s - 1)! \cdot (l - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$
 $D + l_s + s - n - l_i + 1 \leq l \leq i \wedge$
 $1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j^{sa} + j_{sa}^{ik} \wedge$
 $j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa}^{ik} \leq j_i \leq$
 $l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa}^{ik} = l_{sa} \wedge$
 $D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$
 $D \geq n < n \wedge l = i > 0 \wedge$
 $j_s \leq j_{sa}^{ik} - j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$
 $s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}^{ik}, \dots, j_{sa}^{ik}\}$
 $s > 4 \wedge l = s + \mathbb{k} \wedge$
 $\mathbb{k}_z: z = 2 \wedge l = \mathbb{k}_1 + l_i \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{is}=n+l_k-j_s+1)}} \sum_{\substack{n_{is}+j_s-j_{ik}-l_{k_1} \\ n_{ik}=n+l_{k_2}-j_{ik}+1}} \\
 & \sum_{\substack{(n_{ik}+j_{ik}-j^{sa}-l_{k_2}) \\ (n_{sa}=n-j^{sa}+1)}} \sum_{\substack{n_{sa}+j^{sa}-j_i \\ n_s=n-j_i+1}} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j^{sa} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa})^{j^{sa} - l_{ik}} \cdot (j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}} \sum_{\binom{()}{j_s=j_i+j_{sa}-s}} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=l_i+n-D}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{\substack{(n_i-j_s+1) \\ (n_{is}=n+l_k-j_s+1)}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDEN

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_i \leq j^{sa} + j_{sa}^{ik} - l_{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_s \leq j_i \leq l_i$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_i \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \dots, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = \dots + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_{ik}-l-j_{sa}^{ik}+2)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{j_i=l_i+n-D}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_s + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - 1)! \cdot (n - j_i)!} \cdot$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot$$

$$\frac{(l_{sa} + j_{sa}^{lk} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{lk} - l_{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{lk} - j_{ik} - j_{sa})!} \cdot$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot$$

$$\sum_{k=l}^{(l_{ik}-l-j_{sa}^{lk}+2)} \sum_{(j_s=l_i+n-D-s+1)}^{n_s}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{lk}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{lk})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

GÜLDEN

A

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)} \sum_{j_{ik}=j^{sa} + j_{sa}^{ik} - j_{sa}}^{(j_i + j_{sa} - s)} \sum_{(j^{sa}=j_{sa} + 1)}^{l_s + s - l} \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n+\mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \frac{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2) n_{sa} + j_{sa} - j_i}{(n_{sa} = n - j^{sa} + 1) n_s = n - j_i + 1} \cdot \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

GÜLDÜNYA

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot$$

$$\frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - j^{sa} + 1)!} \cdot$$

$$\frac{(l_i + j_{sa} - l_s - j^{sa} - s)!}{(j^{sa} + l_i - j_s - j^{sa} - s)! \cdot (j_i + j_s - j^{sa} - s)!} \cdot$$

$$\frac{(D - l_s - 1)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{k=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{sa}+1)}^{l_i-l+1} \sum_{j_i=l_s+s-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - l_k - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_k)!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{j_{sa}=j_i}^{(n)} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}}^{(n)} \sum_{j_i=s+1}^{l_s+s-l}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}}^{(n)} \sum_{j_i=s+1}^{l_s+s-l} \sum_{j_i=s+1}^{l_s+s-l}$$

$$\sum_{n+l_k}^{(n_i-1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{is}=n+l_k-j_s+1)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{(n)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$n > n - l \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = l_k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$\mathbf{s}: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge \mathbf{s} = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_s-1)} \sum_{(j_{ik}-j_{sa}^{ik}+1)}^{l_{ik}+1} \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{is}-\mathbb{k}_1-j_s+1)}^{(n_{is}-\mathbb{k}_1-j_s+1)} \sum_{(n_{ik}-j_{ik}+1)}^{(n_{ik}-j_{ik}+1)} \sum_{(n_{ik}+j_{sa}-\mathbb{k}_2)}^{(n_{ik}+j_{sa}-\mathbb{k}_2)} \sum_{(n_{sa}+j_{sa}-j_i)}^{(n_{sa}+j_{sa}-j_i)} \sum_{(n_s-n-j_i+1)}^{(n_s-n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = 2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(l_{sa} - l + 1)} \sum_{(j^{sa} = l_s + j_{sa} - l + 1)}^{(l_s - l + 1)} \sum_{j_{ik} = j^{sa} + s - j_{sa}}^{(l_i - l + 1)} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1 + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + j_{ik} - k_1)}^{n_{is} + j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n - j_i + 1)}^{(n_{ik} + j_{ik} - l - k_2)} \sum_{(n_{sa} = n - j_i + 1)}^{(n_{sa} + j^{sa})} \\
 & \frac{(n_{is} - j_s - k_1 - 1)!}{(n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - j_s - k_1 - 1)!}{(n_{is} - j_s + 1)!} \\
 & \frac{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}{(n_{ik} - n_{sa} - 1)!} \\
 & \frac{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}{(n_{sa} - n_s - 1)!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^a+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}^a=j_{sa}^a+1)} \sum_{j_i=j_{sa}^a+s-j_{sa}}^{(\cdot)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}^{(\cdot)}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}^{(\cdot)}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (j_{sa}^s-j_{sa}^s)! \cdot (j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^s)! \cdot (j_{sa}^s-j_{sa}^s)! \cdot (j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D) \cdot (j_i-n-l_i)! \cdot (n-j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$
 $1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{lk} - j_{sa} \wedge$
 $j_{ik} + j_{sa}^{lk} - j_{sa}^{lk} \leq j_{sa}^a \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$
 $l_{k_1} - j_{sa}^{lk} + 1 > 0 \wedge l_{sa} + j_{sa}^{lk} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$
 $D \geq 4 < n \wedge I = l_{k_1} + 0 \wedge$
 $j_{sa} \leq j_{sa}^{lk} - 1 \wedge j_{sa}^{lk} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{lk} - 1 \wedge$
 $s: \{j_s^s, \dots, l_{k_1}, j_{sa}^{lk}, \dots, j_{sa}^i\} \wedge$
 $s > 4 \wedge s = s + l_k \wedge$
 $z: z = 2 \wedge k = l_{k_1} + l_{k_2} \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(\cdot)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{lk}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \binom{(\quad)}{\quad} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{k_2}-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}}$$

$$\frac{(n_i-1)!}{(j_s-2)! \cdot (n_i-n_{is}-1)!}$$

$$\frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)! \cdot (n_i-n_{ik}-j_{ik}-l_{k_1})!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)! \cdot (n_{sa}+j_{ik}-n_{sa}-j_{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)! \cdot (n_{sa}+j_{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j_{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j_{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \binom{(\quad)}{\quad} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}^{l_i-l+1}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - n_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_i - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot
 \end{aligned}$$

$$\sum_{k=l}^{\binom{()}{j_s=j_{ik}-j_{sa}^{ik}+1}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{\binom{()}{j_i=j^{sa}+s-j_{sa}}} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}$$

GÜLDÜZMAYA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \leq l_i \wedge l_i + j_s - s > l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$f_z S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_i - l_{sa} - s)!}{(j^{sa} + l_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_{z=2}(j_{ik}, j_{sa}, j_{sa}^{ik}) = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_i+j_{sa}-s)} \sum_{(j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa})}^{(j^{sa}=l_{sa}+n-D)} \sum_{(j_i=l_i+n-D)}^{(l_s+s-l)} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+k_2-j_{ik}+1)}^{(n_{is}+j_s-j_{ik}-k_1)} \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\begin{aligned}
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - l_{sa} - s)!} \cdot \\
& \frac{(l_i - l + 1)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{j_s=2}^{(l_s - l + 1)} \sum_{j_{ik}=j^{sa} + j_{sa}^{ik} - j_{sa} - l_{sa} - l + 1}^{(l_i - l + 1)} \sum_{j_i=l_s + s - l + 1}^{(l_i - l + 1)} \\
& \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i - l_s + 1)} \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
& \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k_2}) n_{sa}+j^{sa}-j_i}{\sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}} \\
& \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
& \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot
\end{aligned}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{j_s=j_{ik} - j_{sa}^{ik} + 1}^{()} \sum_{j_{ik}=j^{sa} + \dots}^{()} \sum_{(j^{sa}=j_i + \dots - s)}^{()} \sum_{j_i=l_i + n - D}^{()}$$

$$\sum_{n_i=n+k}^{()} \sum_{n_i=n+k-j_s}^{()} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{()}$$

$$\sum_{n_{sa}=n_{ik} - j^{sa} - k_2}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{()}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_i+n+j_{sa}-D-s-1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{l_i-l+1} \sum_{l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_s+1}^{n_{is}+j_s-j_s-\mathbb{k}_1}$$

$$\frac{(n_{ik}+j_{ik}-j^{sa}-n_{sa}+j^{sa}-j_i)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{sa}+j^{sa}-j_i)!}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}+j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} +$$

$$\sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_i-l+1)} \sum_{j_i=j^{sa}+s-j_{ik}}^{(n_i-j_s+1)} \sum_{n_i=n+l_k}^{(n_i-j_s+1)} \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_{is}+j_s-j_{ik}-l_{k_1})} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{(n_{ik}+j_{ik}-l_{k_1})} \sum_{(n_{sa}=n+l_k-j_{ik}+1)}^{(n_{sa}+j_{ik}-l_{k_1})} \sum_{(n_s=n-j_{ik}+1)}^{(n_s+n-j_{ik}+1)} \frac{(n_i - n_{k_1} - 1)!}{(j_s - 2)! \cdot (n_{is} - n_{ik} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(n_s - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_k_1}^{n_{is}+j_s-j_{ik}-l_k_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)}{(j_s-2) \cdot (n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_k_1-1)!}{(j_{ik}-j_s-1) \cdot (n_{is}-n_{ik}-j_{ik}-l_k_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1) \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(l_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}
 \end{aligned}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D-s)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_s^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)! \cdot (l - 2)!}{(l_s - j_s - 1)! \cdot (l - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}^{ik}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i = l_{ik} \wedge l_{sa} + j_{sa} - s > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + j_i - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \dots, \mathbb{k}_1 - j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k}$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}$$

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_i + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_i + j_i - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - l - 1)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - j_{sa} - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_s - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(n - l - 1)!}{(n - j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i - j_{sa} - l_{sa} - s)!}{(j_s + l_i - j_i - l_s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})} \sum_{j_i = j^{sa} + s - j_{sa}}^{(l_i - l + 1)} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - j^{sa} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_s - j^{sa} - s)!}{(j^{sa} + l_i - j_{sa} - j^{sa} - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_i+1}^{()} \sum_{(j_{sa}^{ik}-D-s)}^{()} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{sa}, j_i} = \sum_{k=l}^{l_i+n-D-s} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_i=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i-l+1)} \sum_{j_i=l_i+n-D}^{l_i-l+1}$$

$$\sum_{i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot$$

$$\begin{aligned}
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - l_i)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{j_s=l_i+n-D-s}^{l_s-l} \binom{l_s-l}{j_s} \cdot \\
 & \sum_{j_{ik}=j_s+l_{ik}-1}^{l_{ik}-l+1} \binom{l_{ik}-l+1}{j_{ik}} \cdot \sum_{j_{sa}=j_{ik}-j_s}^{l_i-l+1} \binom{l_i-l+1}{j_{sa}} \cdot \\
 & \sum_{n_i=n+l_k}^n \binom{n_i-j_s+l_k}{n_i} \cdot \sum_{n_{is}=n_{ik}-j_s+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \binom{n_{is}+j_s-j_{ik}-l_{k_1}}{n_{is}} \cdot \\
 & \sum_{n_{ik}=n+l_{k_2}-j_{ik}+1}^{n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \binom{n_{ik}+j_{ik}-j^{sa}-l_{k_2}}{n_{ik}} \cdot \sum_{n_{sa}=n-j^{sa}+1}^{n_{sa}+j^{sa}-j_i} \binom{n_{sa}+j^{sa}-j_i}{n_{sa}} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot
 \end{aligned}$$

GÜLDENYA

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+k)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{(j_{sa}=j_{ik}+j_{sa}^{ik}-1)} \sum_{(j_i=j_s+j_{sa}^{ik}-j_{sa})}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_s-j_{ik}-k_1)}$$

$$\sum_{(n_{sa}+j_{ik}-j_s)}^{(n_{sa}+j_{ik}-j_s)} \sum_{(n_s=n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_{ik} + j_{ik} - s - k_2)!}{(n_{sa} + j_{sa} - k_2 - s)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i \leq l \wedge l_s \leq D - n - 1 \wedge$$

$$D + j_i + s - n - l_i - 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_s - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa}^{ik} \leq j_i \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + j_{sa}^{ik} > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$l_s - 1 < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_i-l+1)} \sum_{(j_i+l-n-D)}^{(l_i-l+1)}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_s+1)}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\sum_{(n_{ik}+j_{ik}-j_s-\mathbb{k}_2)}^{(n_{ik}+j_{ik}-j_s-\mathbb{k}_2)} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\sum_{(j_i-j^{sa}+1)}^{(j_i-j^{sa}+1)} \sum_{(j_i+1)}^{(j_i+1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(n_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

GÜLDENWA

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{()} \sum_{(j_{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_{sa}^s)! \cdot (j_s-j_s+1)!}{(n_{ik}-j_{ik}-n-k_2-j_{sa}^s)! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_i = 0 + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa}^a + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa}^{ik} - j_{sa} \leq j_{sa}^a \leq j_i + j_{sa} - s \wedge j_{sa}^a - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} \wedge l_{sa} + j_{sa}^{ik} - j_{sa} \geq l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = k_1 + 0 \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s^s, \dots, k_1, j_{sa}^s, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k: z = 2, k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{()}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=s+1}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{(n-j_i+1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_i-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)!(n_i+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)!(n_{sa}+j^{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)!(n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)!(j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)!(j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})!(j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)!(n-j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j_s - j^{sa} - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()} \\
 & \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=s+1}^{l_s+s-l} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDÜZYAZ

$$\frac{\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \binom{(\quad)}{\quad}}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \dots + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - 1)! \cdot (j_{ik} - j_{sa}^{ik} + 1)!}$$

$$\frac{(n_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^{ik} - l_{ik})! \cdot (j_{sa}^{ik} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{j_s=2}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

GÜLDÜZ

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{l_s+j_{sa}-l} \sum_{j_{sa}=j_{sa}+1}^{j_{sa}} \sum_{j_i=j_{sa}+s-j_{sa}}^{n} \sum_{l_i=n+l_k}^{n} \sum_{n_{is}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}}^{(n_{ik}+j_{ik}-j_s-s-l_{k_2})!} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa})! \cdot (n+j_{sa}^s-j_s-s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}^{sa}, j_i} = \sum_{k=l}^{(j_{sa}^{ik}+1)} \frac{\sum_{j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{j_{ik}^{sa}+1}^{(l_{sa}-l+1)} \sum_{j_{sa}^{ik}+1}^{j_{sa}^{ik}-j_{sa}} \sum_{n_i=n+k}^n \sum_{n_{is}=k-j_s+1}^{(n_i-j_s)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \sum_{n_{sa}=n-j_{sa}+1}^{(n_i+j_{ik}-j_{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\begin{aligned}
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa})}^{(l_{sa} - l + 1)} \sum_{(j_{sa}^{ik} - j_{sa})} \\
 & \sum_{n_i=n+\mathbb{k}_1}^n \sum_{(n_i - j_s + \mathbb{k}_1 + 1)}^{(n_i - j_s + \mathbb{k}_1 + 1)} \sum_{(n_{is} + j_s - j_{ik})}^{(n_{is} + j_s - j_{ik})} \\
 & \sum_{(n_{ik} + \mathbb{k}_2 - j_{ik} + 1)}^{(n_{ik} + \mathbb{k}_2 - j_{ik} + 1)} \sum_{(j^{sa} - j_i)}^{(j^{sa} - j_i)} \\
 & \sum_{(n_{sa} = n - \mathbb{k}_1 + 1)}^{(n_{sa} = n - \mathbb{k}_1 + 1)} \sum_{n_s = n - j_i + 1} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+j_s-}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2})! \cdot (n_{is}-j_{ik}+l_{k_1})! \cdot (n_{sa}-j_{sa}^{ik})! \cdot (n_s-j_s+1)! \cdot (l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$D \geq n < n \wedge l \neq l_i \wedge l_i \leq l + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq l_s + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_s \leq j_i + j_{sa} - s \wedge j_s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 \leq l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq l < n \wedge l = l_{k_1} \wedge$$

$$j_{sa} \leq j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} = j_s - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_s^s, l_{k_1}, j_{sa}^s, j_{sa}^{ik}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = l + l_{k_1} \wedge$$

$$l_{k_2} = l_{k_1} \wedge l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}^{ik}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}$$

$$\begin{aligned}
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}-l_{k_1}}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{(n_{sa}+j_{sa}-n-j_i+1)}^{(n_{sa}+j_{sa})} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-l_{k_1}-1)!}{(j_{ik}-j_s-1)!(n_{is}+j_s-n_{ik}-j_{ik}-l_{k_1})!} \cdot \\
 & \frac{(n_{ik}+n_{sa}-1)!}{(j_{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})! \cdot (j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j_{sa}+s-j_{sa}}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}+j_s-j_{ik}-\mathbb{k}_1} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{(\)} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik}+j_{ik}-j_s-s-\mathbb{k}_2)!}{(n_{ik}+j_{ik}-n-\mathbb{k}_2-j_{sa}^s)! \cdot (n+j_s^s-j_s-s-\mathbb{k}_2)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-1)! \cdot (l-2)!} \cdot \frac{(D-l_i)!}{(D+j_i-l-1)! \cdot (n-j_s-1)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa}$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j_i + s - j_{sa} \leq j_{ik} < n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_i > l_{ik} \wedge l_{sa} + j_{sa} - s = l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + j_{sa} - n - 1$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^s = j_{sa}^{ik} - 1$$

$$s \in \{j_{sa}^s, \dots, \mathbb{k}_1 - j_{sa}^{ik}, \mathbb{k}_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k}$$

$$\mathbb{k}_z: z = 1 \wedge \mathbb{k} = \mathbb{k}_1 + \dots \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{j_i=l_i+n-D}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{i_s}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{i_s}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\begin{aligned}
 & \frac{\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!} \cdot \\
 & \frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \cdot \\
 & \frac{(n_s-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{is}+j^{sa}-n_s-1)!} \cdot \\
 & \frac{(n_s-1)!}{(n-j_i-1)! \cdot (n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \cdot \\
 & \frac{(l_{ik}-j_{ik}-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{ik} - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(j_s - l - 1)!}{(j_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_s - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(\cdot)} \sum_{(j_s = j_{ik} - j_{sa}^{ik} + 1)}^{(\cdot)} \\
 & \sum_{j_{ik} = j^{sa} + j_{sa}^{ik} - j_{sa}}^{(\cdot)} \sum_{(j^{sa} = j_i + j_{sa} - s)}^{(\cdot)} \sum_{j_i = l_i + n - D}^{l_s + s - l} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)}^{(\cdot)} \sum_{n_s = n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z S_{j_s, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)}$$

$$\sum_{j_{sa}^{ik} - j_{sa}}^{(l_s + j_{sa} - 1)} \sum_{j_{ik} - j_{sa} + n - D}^{(j^{sa} = l_i + n + j_{sa} - D - s)} \sum_{j_i = j^{sa} + s - j_{sa}}^{(l_s + j_{sa} - 1)}$$

$$\sum_{n_i = n + k}^n \sum_{(n_{is} = n + k - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - k_1}$$

$$\sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - k_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot$$

$$\frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - l_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_s + 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!}$$

$$(D - l_i)!$$

$$\frac{(n - l_i)!}{(n - j_i)!}$$

$$\sum_{k=l}^{j_s-l+1} \sum_{(j_s=2)}$$

$$\sum_{i_{ik}=l_{ik}}^{l_{ik}-l+1} \sum_{(l_i - n - l - s + 1)} \sum_{(l_s + j_{sa} - l + 1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

GÜLDÜZMAYA

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{j_s+1} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_s}^{j_{ik}+1} \sum_{j_{sa}=l_i+l_{sa}-D-s}^{j_{sa}+1} \sum_{j_i=j^{sa}+s-j_{sa}}^{j_i+1} \sum_{n+l_{ik}(n_{is}=n+j_s+1)}^{n+l_{ik}(n_{is}=n+j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}}^{n_{ik}=n_{is}+j_s-j_{ik}-l_{k1}} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k2})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D - n - l_i \neq l_i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$

$D \geq n < n \wedge l_i = l_{k2} > 0 \wedge$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j_{sa}=l_i+n+D-s)}^{(l_i+j_{sa}-l-s)} \sum_{j_i=j_{sa}+s}^{(n-j_s+1)}$$

$$\sum_{n_{is}=l_{ik}-j_s+1}^{n} \sum_{n_{ik}=j_{ik}+1}^{(n_{is}-\mathbb{k}_1-j_s+1)} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{ik}+j_{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s = 2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik} = l_i + n + j_{sa}^{ik} - D - s}^{l_s + j_{sa}^{ik} - l} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_i + j_{sa} - l - s + 1)} \sum_{j_{i_s + s - j_{sa}}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + k_1 + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + k_2}^{n_{is} + j_s - k - k_1} \sum_{(j_{sa} = n - j_i + 1)}^{(n_{ik} + j_{ik} - j_{sa} - k_2)} \sum_{(j_{sa} = n - j_i + 1)}^{(n_{sa} + j_{sa} - j_{sa}^{ik})} \\
 & \frac{(n_{is} - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{is} - k_1 - 1)!}{(j_{ik} - j_{sa}^{ik} - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k}$$

$$\frac{(n_{ik}+j_{ik}-l_k) n_{sa}^{j_{sa}-j_i}}{(n_{sa}=j_{sa}+1) n_s=n-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_k - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_k)!}$$

$$\frac{(n_{ik} + n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_{sa} - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

GÜLDÜZMAYA

$$\sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-l_{k_2})} \sum_{n_s=l_{k_2}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s)!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^{ik})! \cdot (n + j_{sa}^{ik} - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - s)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{ik}^{ik} \leq j_{ik} \leq j_{sa}^{ik} + j_{sa}^{ik} - j_{sa}^{ik} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{ik} \leq j_{ik} + j_{sa} - s \wedge j_{sa}^{ik} - j_{sa} - j_{sa}^{ik} \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa}^{ik} > l_{ik} \wedge l_{sa} - j_{sa} - s = l_{sa} \wedge$

$D + s - n < l_i \leq l_i + l_s + s - n = D$

$D > n < n \wedge l_{k_2} = l_{k_2} > 0$

$j_{sa}^{ik} - j_{sa}^{ik} - 1 \wedge j_{sa}^{ik} - j_{sa}^{ik} - 1 < j_{sa}^{ik} - 1 \wedge$

$\{j_{sa}^{ik}, \dots, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}^{ik}, \dots, j_{sa}^{ik}\} \wedge$

$s > 4 \wedge s = s - l_s \wedge$

$l_{k_2} - l_{k_2} = l_{k_2} - l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$

$$fz^{S_{j_s, j_{ik}, j_{sa}, j_i}} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_{sa}=l_i+n+j_{sa}-D-s)}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{sa} + j_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_i+j_{sa}-l-s+1)} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}}
 \end{aligned}$$

GÜLDÜŞMAYA

$$\begin{aligned}
 & \sum_{(n_{sa}=n-j^{sa}+1)} \sum_{n_s=n-j_i+1}^{(n_{ik}+j_{ik}-j^{sa}-l_{k_2}) n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_s - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{is} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(j_i + j_s - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{ik} - j_{sa}^{ik} + 1)!}{(j_s + j_{ik} - j_{ik} - l_{ik})! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=1}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i}
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_i+j_{sa}-s)} \sum_{j_i=l_{sa}+n+s-D-j_{sa}}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\begin{aligned}
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l - 1)!}{(l_s - l + 1)! \cdot (l - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa} + 1)!}{(j_s + l_{ik} - j_{sa} - 1)! \cdot (j_{ik} - j_{sa} - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(n_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^{ik} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + l_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_s - l + 1)} \cdot \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_s+s-l+1}^{l_{sa}+s-l-j_{sa}+1} \cdot \\
 & \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1} \cdot \\
 & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \cdot \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot
 \end{aligned}$$

GÜLDENWA

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_s)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (n_{sa} + j_{sa}^{ik} - j_{ik} - l_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{j_s+l_s-l} \sum_{j_i=l_{sa}+n+s-D-j_s}^{j_i+j_{sa}-s} \sum_{l_i=n+k_1}^n \sum_{n_{is}=n+k_1-j_s+1}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1}^{(n_i-j_s+1)} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)} \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S j_s, j_{ik}, j_{sa}^{ik} = \sum_{l=1}^{\mathbb{k}+1} \sum_{(j_s=2)}^{j_s} \frac{j_{sa} + j_{sa}^{ik} - j_{sa}}{(l_s + j_s)} \sum_{j_{ik}=l_{ik} - D (j_{sa} = n - D)}^{j_{sa} - j_{sa}^{ik} - j_{sa}} \sum_{i=1}^{n - j_s + 1} \sum_{n_{is} + j_s - j_{ik} - \mathbb{k}_1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \sum_{j_{sa} + \mathbb{k} (n_{is} = \mathbb{k} - j_s + 1)}^{n_{is} + \mathbb{k} (n_{is} = \mathbb{k} - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{ik} + j_{ik} - j_{sa} - \mathbb{k}_2} \sum_{n_{sa} = n - j_{sa} + 1}^{n_{sa} + j_{sa} - j_i} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{l_s-l+1} \sum_{s=2}^{l_s}$$

$$\sum_{j_{ik}=l_{ik}+n}^{l_{ik}-l+1} \sum_{j_{sa}=l_s+j_{sa}-l}^{(l_s-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_{ik}-j_{sa}+j_{sa}^{ik}-l}^n \sum_{n_{is}=n+l_{ik}-j_{sa}+j_{sa}^{ik}-l}^{n-j_s+1} \sum_{n_{ik}=n+l_{ik}-j_{ik}+1}^{j_{ik}-l_{k_1}}$$

$$\sum_{n_{sa}=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-l_{k_2}} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(n_{is} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}=l_{sa}+n-D)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_i=j_s+1)} \sum_{(n_{ik}=j_s-j_{ik}-l_{k_1})}$$

$$\sum_{(n_{sa}=n_{ik}-j_{sa}^{ik})} \sum_{n_s=n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - s - l_{k_2})!}{(n_{ik} + j_{ik} - l_{k_2} - j_i)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_s \leq D - n - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_{sa} + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} + j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + j_{sa} - 1 \wedge l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$$

$$l_i \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{sa}+n+j_{sa}^{ik}-D-j_{sa}-1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{(n_{ik}+j_{ik}-\mathbb{k}_1)}^{n_{is}+j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{ik}+j_{ik}-\mathbb{k}_2)}^{(n_{ik}+j_{ik}-\mathbb{k}_2)} \sum_{(n_s=n-j_i+1)}^{n_{sa}+j_{ik}-\mathbb{k}_1}$$

$$\frac{(n_i - n_{is})}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - j_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{ik} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +$$

$$\sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

GÜLDÜZMİNAR

$$\begin{aligned}
 & \sum_{j_{ik}=l_s+j_{sa}^{ik}-l}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_i}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{ik}+j_{ik}-j_{sa}-k_2)} \sum_{(n-j_i+1)}^{n_{sa}+j_{sa}} \\
 & \frac{(n_i-1)!}{(j_s-2)!(n_i-n_{is}-1)!} \cdot \\
 & \frac{(n_i-n_{ik}-k_1-1)!}{(j_{ik}-j_s-1)!(n_i-n_{ik}-j_{ik}-k_1)!} \cdot \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{sa}-j_{ik}-1)!(n_{sa}+j_{ik}-n_{sa}-j_{sa})!} \cdot \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j_{sa}-1)!(n_{sa}+j_{sa}-n_s-j_i)!} \cdot \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)!(n-j_i)!} \cdot \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)!(j_s-2)!} \cdot \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)!(j_{ik}-j_s-j_{sa}^{ik}+1)!} \cdot \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j_{sa}-l_{ik})!(j_{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \cdot \\
 & \frac{(D-l_i)!}{(D+j_i-n-l_i)!(n-j_i)!} + \\
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}
 \end{aligned}$$

$$\sum_{j_{ik}=l_s+j_{sa}^{ik}-l+1}^{l_{ik}-l+1} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}$$

GÜLDENWA

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n+l_k-j_{i_k}+1}^{n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

$$\sum_{n_{s_a}=n-j_{s_a}+1}^{(n_{i_k}+j_{i_k}-j_{s_a}-l_{k_2})} \sum_{n_s=n-j_i+1}^{n_{s_a}+j_{s_a}-j_i}$$

$$\frac{(n_i - n_{i_s} - 1)!}{(j_s - 2)! \cdot (n_i - n_{i_s} - j_s + 1)!}$$

$$\frac{(n_{i_s} - n_{i_k} - l_{k_1} - 1)!}{(j_{i_k} - j_s - 1)! \cdot (n_{i_s} + j_s - j_{i_k} - l_{k_1})!}$$

$$\frac{(n_{i_k} - n_{i_s} - 1)!}{(j_{s_a} - j_{i_k} - 1)! \cdot (n_{i_k} + j_{i_k} - n_{s_a} - j_{i_s})!}$$

$$\frac{(n_{s_a} - 1)!}{(j_{i_s} - j_{s_a} - 1)! \cdot (n_{s_a} + j_{s_a} - j_{i_s})!}$$

$$\frac{(n_s - 1)!}{(n_i + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{i_k} - l_s - j_{s_a}^{i_k} + 1)!}{(j_s - j_{i_k} - j_{i_k} - l_s)! \cdot (j_{i_k} - j_s - j_{s_a}^{i_k} + 1)!}$$

$$\frac{(l_{s_a} + j_{s_a}^{i_k} - l_{i_k} - j_{s_a})!}{(j_{i_k} + l_{s_a} - j_{s_a} - l_{i_k})! \cdot (j_{s_a} + j_{s_a}^{i_k} - j_{i_k} - j_{s_a})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{()} \sum_{(j_s=j_{i_k}-j_{s_a}^{i_k}+1)}^{()}$$

$$\sum_{j_{i_k}=l_{s_a}+n+j_{s_a}^{i_k}-D-j_{s_a}}^{l_s+j_{s_a}^{i_k}-l} \sum_{(j_{s_a}=j_{i_k}+j_{s_a}-j_{s_a}^{i_k})}^{()} \sum_{j_i=j_{s_a}+s-j_{s_a}}$$

$$\sum_{n_i=n+l_k}^n \sum_{n_{i_s}=n+l_k-j_s+1}^{(n_i-j_s+1)} \sum_{n_{i_k}=n_{i_s}+j_s-j_{i_k}-l_{k_1}}$$

GÜLDÜŞMAYA

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - l)!} \cdot \frac{(D - l_s)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_s \leq n$

$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - j_{ik} \wedge l_i + j_{sa} - s = l_s \wedge$

$D + j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - j_{sa}^s < j_{sa} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + 1 \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k}_z = \mathbb{k}_1 + 1 \Rightarrow$

$$fz^{S_{j_s, j_{ik}, j^{sa}, j_i}} = \sum_{k=l}^{(l_{sa}+n-D-j_{sa})} \sum_{(j_s=2)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa}+n-D)}^{(l_{sa}-l+1)} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-\mathbb{k}_1}$$

$$\sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i}$$

$$\begin{aligned}
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_s - j_{ik} - 1)!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s + j^{sa} - n - 1)!}{(n_s + j^{sa} - n - 1)! \cdot (n_s - j_i)!} \cdot \\
 & \frac{(n_s - l - 1)!}{(n_s - l - 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - j_{sa}^{ik} - 1)!}{(j_s + l_{ik} - j_{sa}^{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_s - l_{ik} - j_{sa}^{ik})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa}^{ik})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l - 1)} \sum_{(j_s = l_{sa} + n - D - j_{sa} + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_i = j^{sa} + s - j_{sa}} \\
 & \sum_{n_i = n + \mathbb{k}}^n \sum_{(n_{is} = n + \mathbb{k} - j_s + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + \mathbb{k}_2 - j_{ik} + 1}^{n_{is} + j_s - j_{ik} - \mathbb{k}_1} \\
 & \sum_{(n_{sa} = n - j^{sa} + 1)}^{(n_{ik} + j_{ik} - j^{sa} - \mathbb{k}_2)} \sum_{n_s = n - j_i + 1}^{n_{sa} + j^{sa} - j_i} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i - 1)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j^{sa} - 1)!}{(j_s + l_{ik} - j_{ik} - l_s - j^{sa} - 1)! \cdot (j_{ik} - j_s - j^{sa} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik} - 1)! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j^{sa})!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{(l_s-l-1)} \sum_{(j_s=l_{sa}+n-D-j_{sa}+1)} \\
 & \sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_i=j^{sa}+s-j_{sa}} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-k_1} \\
 & \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-k_2)}^{()} \sum_{n_s=n_{sa}+j^{sa}-j_i} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - k_2)!}{(n_{ik} + j_{ik} - n - k_2 - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

$D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$\begin{aligned} & S_{j_s, j_{ik}, j_i} = \sum_{k=l}^{s-l+1} \sum_{(j_s=2)} \\ & \sum_{j_{ik}=l_{ik}-l+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_i+n-D}^{l_i-l+1} \\ & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+k_2-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\ & \sum_{(n_{sa}=n-j^{sa}+1)}^{(n_{ik}+j_{ik}-j^{sa}-k_2)} \sum_{n_s=n-j_i+1}^{n_{sa}+j^{sa}-j_i} \\ & \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\ & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\ & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\ & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\ & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \end{aligned}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{j_{ik}=j_{sa}^{ik}-j_{sa}}^{j_{sa}^{ik}-j_{sa}} \sum_{j_s=j_{ik}-j_{sa}^{ik}+1}^{j_s+1} \sum_{j_i=j_i+j_{sa}-s}^{l_s+s-l} \sum_{j_i=l_i+n-D}^{j_i+l_s+s-l} \sum_{n+l_k}^n \sum_{(n_{is}=n+l_s+1)}^{(j_s+1)} \sum_{n_{ik}=n_{is}+j_s-j_{ik}-l_{k_1}} \sum_{(n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2})} \sum_{n_s=n_{sa}+j^{sa}-j_i} \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n + j_{sa}^s - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D - n - l \neq l \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1 \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l_s}^{(l_s-l+1)} \sum_{j_s=2}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=l_{ik}+1}^{l_{ik}-l+1} \sum_{j_{sa}=l_{sa}+n_{sa}}^{(j_{sa}-l+1)} \sum_{j_i=j_{sa}+s-j_{sa}}^{(j_{sa}-l+1)}$$

$$\sum_{n_i=n_{sa}+1}^n \sum_{n_{is}=n+\mathbb{k}_1+1}^{n-j_s+1} \sum_{n_{ik}=n+\mathbb{k}_2-j_{ik}+1}^{n-j_s+1}$$

$$\sum_{a=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-\mathbb{k}_2} \sum_{n_s=n-j_i+1}^{n_{sa}+j_{sa}-j_i}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜNYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)}$$

$$\sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{()} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_{sa} = j_s + s - j_{sa}}^{()}$$

$$\sum_{n_i = n + k}^n \sum_{(n_{is} = n + k + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n_{is} + j_{sa} - k_1}^{()}$$

$$\sum_{(n_{sa} = n_{is} + j_{sa} - j_{sa}^{ik} - j_{sa} - j_i)}^{()} \sum_{(n_{ik} = j_{ik} - j_{sa} - s - k_2)}^{()}$$

$$\frac{(n_{ik} - j_{ik} - j_{sa} - s - k_2)!}{(n_i + j_{ik} - n - k_1 - j_{sa}^s)! \cdot (n_i + j_{sa} - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$D \geq n < n \wedge l \neq 1 \wedge l_s \leq D - n - 1 \wedge$

$D + l_s + s - l_i + 1 \leq l \leq l - 1 \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} - 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$

$l_{ik} - j_{sa}^{ik} + 1 \leq l_s \wedge l_{ik} - j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$

$D - j_{sa} - n < l_{sa} \leq D + l_s + j_{sa} - n - 1 \wedge$

$D \geq n < n \wedge l = k > 0 \wedge$

$j_{sa} - j_{sa} - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + k \wedge$

$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$

$$\begin{aligned}
 f_{zS} S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)} \\
 &\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{()} \sum_{j_i=l_{sa}+n+s-D-j_{ik}}^{l_{sa}+s-l-j_{sa}+1} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n-l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_k} \\
 &\frac{(n_{ik}+j_{ik}-l_k-1)! \cdot (n_{sa}+j_{sa}-j_i-1)!}{(j_s-2)! \cdot (n_{ik}-j_s+1)!} \\
 &\frac{(n_{sa}-j_{sa}+1)! \cdot (n_s-n-j_i-1)!}{(n_{sa}+j_{sa}-n_s-j_i-1)!} \\
 &\frac{(n_i-n-l_k-1)!}{(j_s-2)! \cdot (n_{ik}-j_s+1)!} \\
 &\frac{(n_{is}-n_{ik}-l_k-1)!}{(j_{ik}-j_s-1)! \cdot (n_{is}+j_s-j_{ik}-l_k-1)!} \\
 &\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 &\frac{(n_{sa}-n_s-1)!}{(n_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 &\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 &\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 &\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \\
 &\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 &\frac{(D-l_i)!}{(D+j_i-n-l_i)! \cdot (n-j_i)!} \\
 &\sum_{k=l}^{()} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}
 \end{aligned}$$

GÜLDÜZMÜŞA

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{l_s+s-l}^{l_s+s-l}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{\binom{(n_i-j_s+1)}{n_{is}=n+\mathbb{k}-j_s+1}} \sum_{n_{ik}=n_{is}+j_s-j_{ik}}$$

$$\sum_{\binom{()}{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2}} \sum_{n_s=n_{sa}+j^{sa}-j_i}$$

$$\frac{(n_{ik} + j_{ik} - j_s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^{ik})! \cdot (n + j_{sa} - s)!}$$

$$\frac{(j_s - l - 1)!}{(j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D + j_s - n - l_i)! \cdot (n - j_i)!}{(D + j_s - n - l_i)! \cdot (n - j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n) \vee (D \geq n < n \wedge l = i \wedge l_i \leq D + s - n) \right) \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - 1 > l_{ik} \wedge l_{sa} + j_{sa} - s > l_{sa} \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge l_i \leq D + s - n) \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_s - s + 1 \leq l_s \wedge$$

$$l_i \leq D + s - n$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$l_s < j_s - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$\begin{aligned}
 f_{z^S} S_{j_s, j_{ik}, j^{sa}, j_i} &= \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)} \\
 &\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(j_i+j_{sa}-s)} \sum_{j_i=s}^{l_s+s-l} \\
 &\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k-j_{ik}+1}^{n_{is}+j_s-j_{ik}-l_{k_1}} \\
 &\sum_{(n_{sa}=n+l_k+1)}^{(n_{ik}+j_{ik}-j_s)} \sum_{n_s=n-j_i}^{n_{sa}-j^{sa}-j_i} \\
 &\frac{(n_s - n_{is} - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 &\frac{(n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \\
 &\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 &\frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 &\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 &\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 &\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 &\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 &\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 &\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} +
 \end{aligned}$$

GÜLDÜZMAYA

$$\begin{aligned}
 & \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{sa}+1)}^{(l_{sa}-l+1)} \sum_{j_i=l_s+s-l+1}^{l_i-l+1} \\
 & \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}+1}^{n_{is}+j_s-j_{ik}-k_1} \\
 & \frac{(n_{ik}+j_{ik}-k_1) \cdot (n_{sa}+j^{sa}-j_i)}{(n_{sa}=j_{sa}+1) \cdot (n_s=n-j_i)} \\
 & \frac{(n_i - n_{sa} - 1)!}{(j_s - 2)! \cdot (n_{sa} + j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
 & \frac{(n_{ik} + n_{sa} - 1)!}{(j^{sa} + j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}
 \end{aligned}$$

GÜLDENWASSER

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\cdot)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\cdot)} \sum_{j_i=s}^{l_s+s-l}$$

$$\sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}-k_2)}^{(\cdot)} \sum_{n_s=n_{sa}+j_s}$$

$$\frac{(n_{ik}-j_{ik}-n-k_2-j_s+1)! \cdot (j_{sa}^s)! \cdot (j_s-s)!}{(l_s-l-1)! \cdot (l_s-j_s-k_1+1)! \cdot (j_s-2)! \cdot (D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge \right.$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_s \wedge$$

$$(D - n - l_i - n) \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^l\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa}+1)}^{(l_s+j_{sa}-l)} \sum_{j_i=l-s-j_{sa}}^{l-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa})}^{(n_{is}+j_s-n_{ik}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{ik}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=j_{sa}^{ik}+1}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa+s-j_{sa}}=j_{ik}-l+1}^{l_{ik}-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_{is}+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{ik}+1}^{n_{is}+j_{ik}-l_{k1}} \\
 & \sum_{(n_{sa}=n+l_{sa}-1)}^{(n_{ik}+j_{ik}-l_{k2})} \sum_{(n_{is}=n+l_{is}-1)}^{n_{sa}+j^{sa}} \\
 & \frac{(n_{is}-l_{is}-1)! \cdot (n_{is}-j_s+1)!}{(j_{ik}-l_{ik}-1)! \cdot (n_{ik}+j_s-n_{ik}-j_{ik}-l_{k1})!} \\
 & \frac{(n_{is}-l_{is}-l_{k1}-1)!}{(j_{ik}-l_{ik}-1)! \cdot (n_{ik}+j_s-n_{ik}-j_{ik}-l_{k1})!} \\
 & \frac{(n_{ik}-n_{sa}-1)!}{(j_{ik}-l_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!} \\
 & \frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!} \\
 & \frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!} \\
 & \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \\
 & \frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!} \\
 & \frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!} \\
 & \frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{sa}+j_{sa}^{lk}-j_{sa}}^{(l_s+j_{sa}-l)} \sum_{(j_{sa}^{sa}=j_{sa}^{sa}+1)} \sum_{j_i=j_{sa}^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{lk_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{lk_2}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k_2}-j_{sa}^{lk_2})! \cdot (j_{sa}^{lk_2}-j_{sa}^{lk_2})! \cdot (j_s-s)!}{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^{lk_2})! \cdot (j_{sa}^{lk_2}-j_{sa}^{lk_2})! \cdot (l_s-l-1)!}$$

$$\frac{(l_s-j_s-l+1)! \cdot (j_s-2)!}{(D-l_i)!}$$

$$\frac{(D-l_i)!}{(D-l_i-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$((D \geq n < n \wedge l \neq i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa}^{sa} + j_{sa}^{lk} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{lk} \wedge j_i + j_{sa} - s \wedge j_{sa}^{sa} - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{lk} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa}) \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa}^{sa} + j_{sa}^{lk} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa}^{lk} \wedge j_i + j_{sa} - s \wedge j_{sa}^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_{sa} \wedge$$

$$(D - n - l_i - n)) \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^l - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, l_{k_1}, j_{sa}^{ik}, l_{k_2}, j_{sa}, \dots, j_{sa}^l\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=l-1}^{l_i-l+1} \sum_{(j_i+l-s-j_{sa})}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-j_{sa}^{ik})}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-j_{sa}^{ik})}^{(n_{ik}+j_s-n_{is}-\mathbb{k}_1)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_i-n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(j_s-2)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j_s-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

GÜLDÜZMAYA

$$\begin{aligned}
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
& \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
& \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{sa}^{sa} + s - j_{sa}}^{l_i - l + 1} \\
& \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1 + 1)}^{(n_i - j_s + 1)} \sum_{n_{ik} = n + j_{ik} - k_1}^{n_{is} + j_{ik} - k_1} \\
& \frac{(n_{ik} + j_{ik} - k_1 - k_2) n_{sa} + j_{sa}^{sa}}{(n_{sa} = n + j_{sa} - k_1) \cdot (n - j_i + 1)} \\
& \frac{(n_{is} - k_1 - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
& \frac{(n_{is} - k_1 - 1)!}{(j_{ik} - k_1 - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
& \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
& \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
& \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
& \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
\end{aligned}$$

$$\sum_{k=l}^{(\cdot)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}+1}^{l_s+j_{sa}^{ik}-l} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\cdot)} \sum_{j_i=j^{sa}+s-1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\cdot)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}{(n_{ik}+j_{ik}-n-l_{k2}-j_{sa}^{ik})! \cdot (n_{is}-j_{ik}+l_{k1}-j_s-s)!}$$

$$\frac{(l_s-l-1)!}{(l_s-l-1)! \cdot (j_s-2)!}$$

$$\frac{(D-l_i)!}{(D-l_i-n-l_i)! \cdot (n-j_i)!}$$

$$((D \geq n < n \wedge l \neq i \wedge l_i = D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa} - j_{sa}^{ik} \wedge l_i + j_{sa} - s > l_{sa}) \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} + j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_{sa} \wedge$$

$$(l_i - s - n)) \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=2)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(l_{sa}-l+1)} \sum_{j_i=j_s+j_{sa}-j_{sa}^{ik}}^{l_i-l+1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{is}=n+\mathbb{k}-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n+\mathbb{k}_2-1)}^{(n_{is}+j_s-j_{sa}^{ik}-\mathbb{k}_1)}$$

$$\sum_{(n_{ik}+j_{ik}-j_{sa}^{ik})}^{(n_{ik}+j_{ik}-j_{sa}^{ik})} \sum_{(n_{sa}+j^{sa}-j_i)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_{is}-n_{is}-1)!}{(j_s-2)! \cdot (n_{is}-j_s+1)!}$$

$$\frac{(n_{is}-n_{is}-\mathbb{k}_1-1)!}{(n_{ik}-j_s-1)! \cdot (n_{is}+j_s-n_{ik}-j_{ik}-\mathbb{k}_1)!}$$

$$\frac{(n_{ik}-n_{sa}-1)!}{(j^{sa}-j_{ik}-1)! \cdot (n_{ik}+j_{ik}-n_{sa}-j^{sa})!}$$

$$\frac{(n_{sa}-n_s-1)!}{(j_i-j^{sa}-1)! \cdot (n_{sa}+j^{sa}-n_s-j_i)!}$$

$$\frac{(n_s-1)!}{(n_s+j_i-n-1)! \cdot (n-j_i)!}$$

$$\frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!}$$

$$\frac{(l_{ik}-l_s-j_{sa}^{ik}+1)!}{(j_s+l_{ik}-j_{ik}-l_s)! \cdot (j_{ik}-j_s-j_{sa}^{ik}+1)!}$$

$$\frac{(l_{sa}+j_{sa}^{ik}-l_{ik}-j_{sa})!}{(j_{ik}+l_{sa}-j^{sa}-l_{ik})! \cdot (j^{sa}+j_{sa}^{ik}-j_{ik}-j_{sa})!}$$

$$\frac{(l_i+j_{sa}-l_{sa}-s)!}{(j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \sum_{j_{ik}=j_s + j_{sa}^{ik} - 1}^{()} \sum_{(j_{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{()} \sum_{j_{sa}^{sa} + s - j_{sa}}^{()} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-1)}^{(n_i - j_s + 1)} \sum_{n_{ik}=n_{is} + j_{sa} - k_1}^{()} \sum_{(n_{sa}=n_{ik} - j_{sa} - k_2)}^{()} \sum_{j_{sa} - j_i}^{()} \frac{(n_{ik} - j_{ik} - j_{sa} - s - k_2)!}{(n_i + j_{ik} - n - k_1 - j_{sa}^s)! \cdot (n_i + j_{sa} - j_s - s)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\begin{aligned} & ((D \geq n < n \wedge l_i \neq l_s \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \vee \\ & ((D \geq n < n \wedge l_i \neq l_s \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_i - s + 1 > l_s \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \wedge \\ & D \geq n < n \wedge l_i = k > 0 \wedge \end{aligned}$$

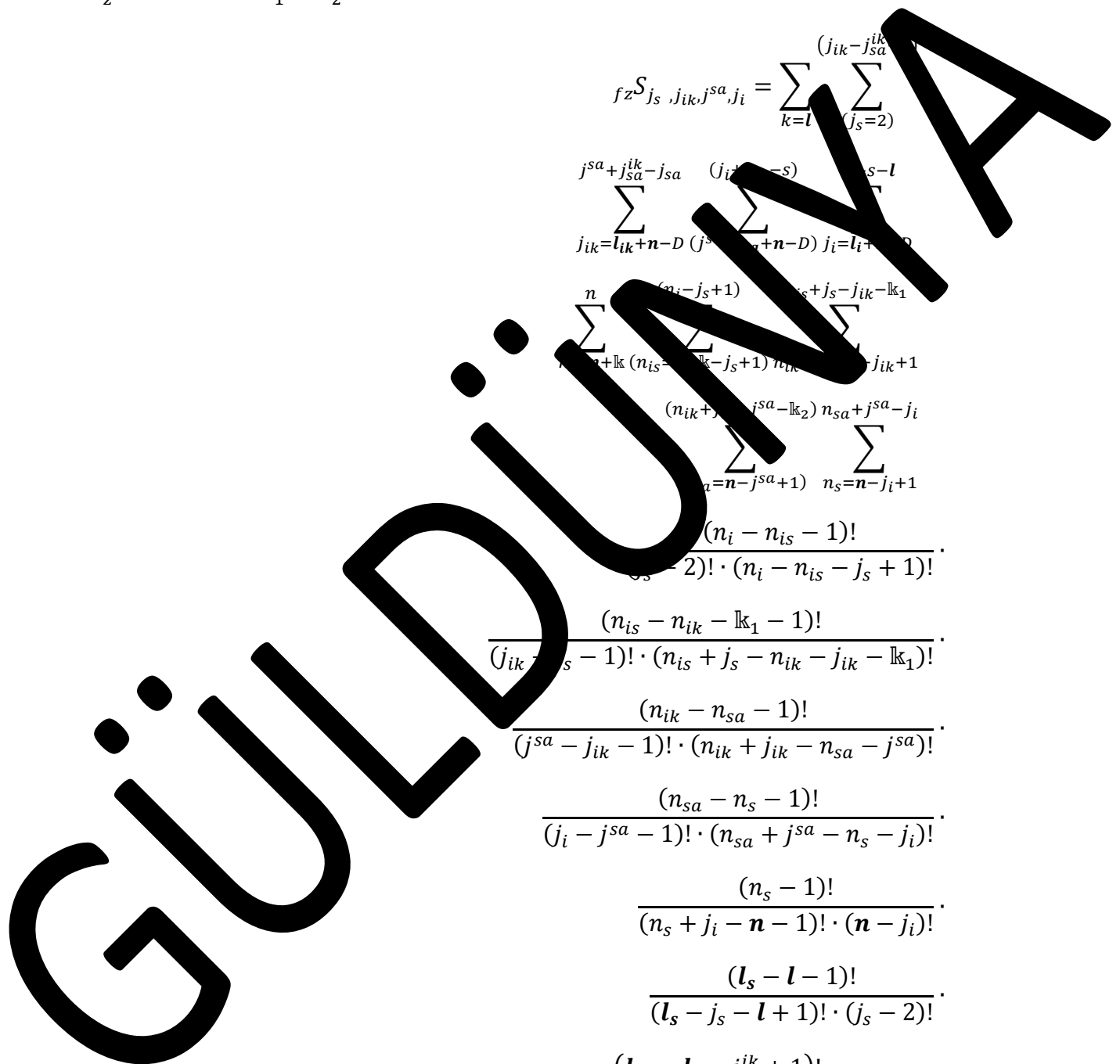
$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_z S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_{ik}=l_{ik}+n-D}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_i=l_i-s)}^{(j_i=l_i-s)} \sum_{j_i=l_i+1}^{(j_i=l_i-s)} \sum_{(n_{is}=n_{ik}-j_s+1)}^{(n_{is}=n_{ik}-j_s+1)} \sum_{(n_{ik}+j_{ik}-n_{sa}-j_{sa}^{ik})}^{(n_{ik}+j_{ik}-n_{sa}-j_{sa}^{ik})} \sum_{(n_{sa}=n-j_{sa}+1)}^{(n_{sa}=n-j_{sa}+1)} \sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa}^i)!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa}^i - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa}^i - l_{ik})! \cdot (j_{sa}^i + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$



$$\begin{aligned}
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{j_s=2}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=l_{sa})}^{(l_{sa}-l+1)} \sum_{j_i=l_s-l+1}^{(l_s-l+1)} \\
 & \sum_{n_i=n+1}^n \sum_{(n_i-j_s)}^{(n_i-j_s)} \sum_{(n_i+j_s-j_{ik})}^{(n_i+j_s-j_{ik})} \\
 & \sum_{(n_{sa}=n_{sa}+1)}^{(n_{sa}=n_{sa}+1)} \sum_{n_s=n-j_i+1}^{(n_s=n-j_i+1)} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \\
 & \frac{(n_{ik} - k_1 - 1)!}{(j_{ik} - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \sum_{k=l}^{(\)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{(\)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}}^{(\)} \sum_{(j^{sa}=j_i+j_{sa}-s)}^{(\)} \sum_{(l_s+s=l_i+n-D)}^{l_s+s} \sum_{n_i=n+k}^n \sum_{(n_{is}=n+k-1)}^{(n_i-j_s+1)} \sum_{(n_{ik}=n_{is}+j_s-k_1)}^{(n_{ik}-j_{ik}-j_s-s-k_2)} \frac{(n_{ik}-j_{ik}-j_s-s-k_2)!}{(n_i+j_{ik}-n-k_1-j_{sa}^s)! \cdot (j_{sa}-j_s-s)!} \frac{(l_s-l-1)!}{(l_s-j_s-l+1)! \cdot (j_s-2)!} \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\begin{aligned} & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_i - j_{sa}^{ik} + 1 > l_s \wedge l_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \vee \\ & (D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_i - s + 1 > l_s \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \wedge \\ & D \geq n < n \wedge l = \mathbb{k} > 0 \wedge \end{aligned}$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$f_{z^S} S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik})} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik})} \sum_{j_{ik}=l_{ik}+n-D}^{j_{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j_{sa} \geq l_{ik}+n-D)}^{(l_i+n+j_s-s-1)} \sum_{j_i=l_i+1}^{l+1} \sum_{(n_i-j_s+1)}^n \sum_{(n_{is}-\mathbb{k}-j_s+1)}^{(n_{is}-\mathbb{k}-j_s+1)} \sum_{(n_{ik}+j_{ik}-n_{sa}-j_{sa}-j_i)}^{(n_{ik}+j_{ik}-n_{sa}-j_{sa}-j_i)} \sum_{(n_{sa}-j_{sa}+1)}^{(n_{sa}+j_{sa}-j_i)} \sum_{(n_s=n-j_i+1)}^{(n_s=n-j_i+1)} \frac{(n_i - n_{is} - 1)!}{(j_s - 2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

GÜLDÜZÜMÜ

$$\begin{aligned}
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{j^{sa} + j_{sa}^{ik} - j_{sa}} \sum_{(j^{sa}=l_i+n+j_{sa}-D)}^{(l_s + j_{sa} - l)} \sum_{(j_s=l+1)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{n_i=n+l_{ik}}^n \sum_{(n_i - j_s = l_{ik} + 1)}^{(n_i - j_s = l_{ik} + 1)} \sum_{(n_{is} + j_s - j_{ik})}^{(n_{is} + j_s - j_{ik})} \\
 & \frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j^{sa}=l_s+j_{sa}-l+1)}^{(l_{sa}-l+1)} \sum_{j_{ik}^{sa+s-j_{sa}}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_{is}+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_{ik}+1}^{n_{is}+j_{ik}-l_{k_1}} \\
 & \sum_{(n_{sa}=n+l_{sa}+1)}^{(n_{ik}+j_{ik}-l_{k_2})} \sum_{(n_{sa}+j^{sa})}^{n_{sa}+j^{sa}} \\
 & \frac{(n_{is} - l_{k_1} - 1)!}{(n_{is} - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - l_{k_1} - 1)!}{(j_{ik} - l_{k_1} - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - l_{k_1})!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{k=l} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}+j_{sa}^{lk}-j_{sa}} \sum_{(l_s+j_{sa}-l)}^{(l_s+j_{sa}-l)} \sum_{j_i=j_{sa}+s-j_{sa}^{ik}}$$

$$\sum_{n_i=n+k}^n \sum_{(n_i-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}-j_{ik}-k_1}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik_2})}^{()} \sum_{n_s=n_{sa}+j_{sa}^{ik_2}}$$

$$\frac{(n_{ik}+j_{ik}-j_{sa}^{ik_2}-s-k_2)!}{(n_{ik}-j_{ik}-n-k_2)!(j_{sa}^{ik_2})! \cdot (j_{sa}^{ik_2}-j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s-k_2+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D)j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\left((D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1) \wedge \right.$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \vee$$

$$(D \geq n < n \wedge l \neq i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{lk} - 1 \leq j_{ik} \leq j_{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j_{sa} \leq j_i + j_{sa} - s \wedge j_{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{sa} + j_{sa}^{ik} - j_{sa} > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(j_{ik}-j_{sa}^{ik}+1)} \sum_{(j_s=2)}^{(j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_i+n+j_{sa}^{ik}-D-s-1} \sum_{(j_{sa}=l_{sa}-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+}^n \sum_{(n_i-j_s)}^{(n_i-j_s)} \sum_{(n_i+j_s-j_{ik}+1)}^{(n_i+j_s-j_{ik}+1)}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{ik} - k_1 - 1)!}{(j_{ik} - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

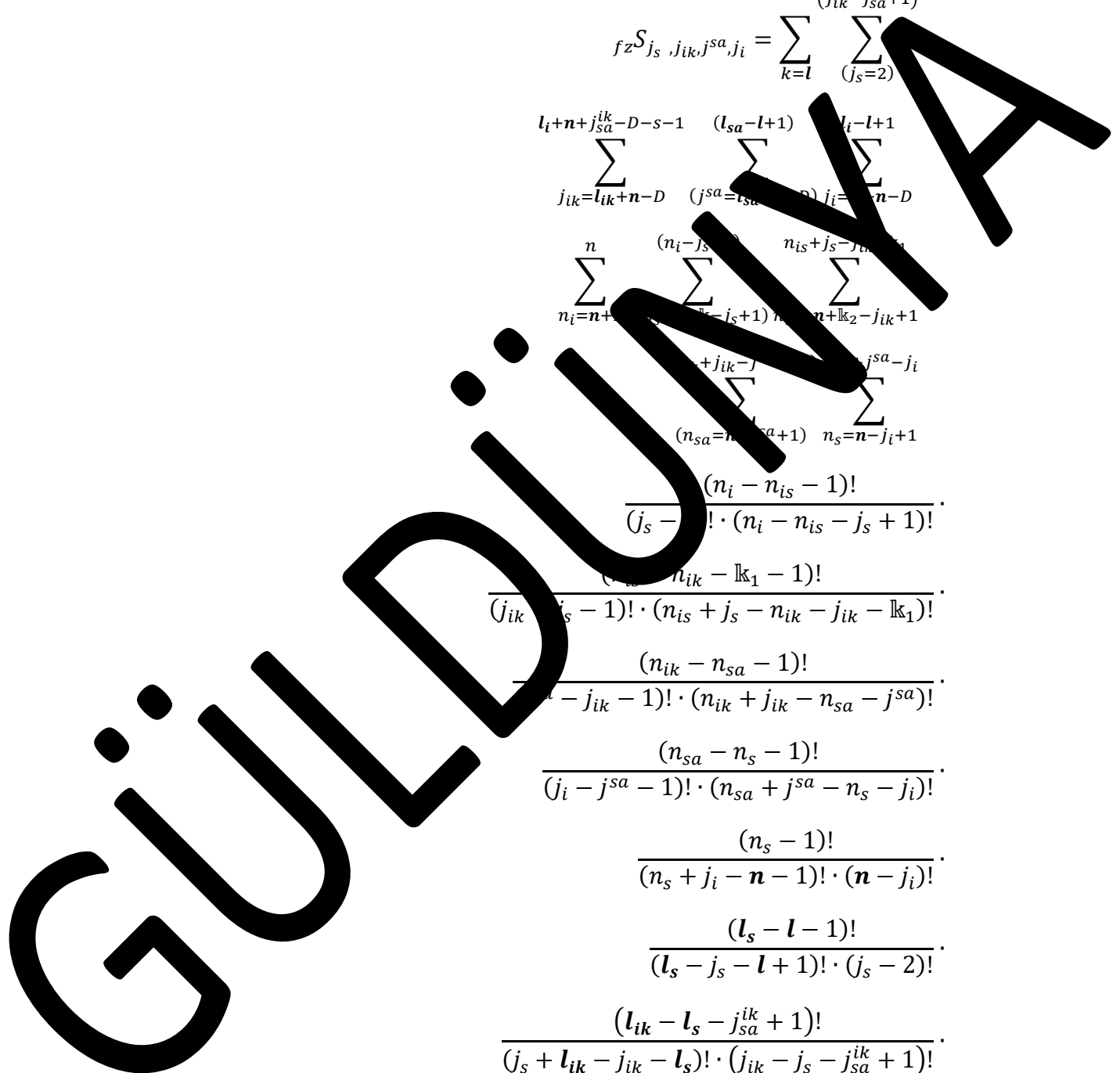
$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$



$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(j_{ik} - j_{sa}^{ik} + 1)} \sum_{(j_s=2)}^{(j_{ik} - j_{sa}^{ik} + 1)} \\
 & \sum_{j_{ik}=l_i+n+j_{sa}^{ik}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=l+1)}^{(l_{sa}-l+1)} \sum_{j_{i+sa}-j_{sa}}^{l_i-l+1} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n+l_k}^{n_{is}+j_s-l_k-1} \\
 & \sum_{(j_{sa}=n-j_i+1)}^{(n_{ik}+j_{ik}-l_k-1)} \sum_{(j_{sa}=n-j_i+1)}^{(n_{sa}+j_{sa}-j_{ik})} \\
 & \frac{(j_s - 2)! \cdot (n_{is} - j_s + 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - n_{ik} - l_k - 1)!}{(j_{ik} - j_{sa} - 1)! \cdot (n_{ik} + j_s - n_{ik} - j_{ik} - l_k)!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}
 \end{aligned}$$

GÜLDENWA

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s=2)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik}=l_s + j_{sa}^{ik} - l + 1}^{l_{ik} - l + 1} \sum_{(j^{sa}=j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{ik}^{sa} = j_{sa} - j_{sa}^{ik}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1 + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + j_{ik} - k_1 - 1)}^{n_{is} + j_{ik} - k_1} \\
 & \sum_{(n_{sa} = n - j_i + 1)}^{(n_{ik} + j_{ik} - k_1 - k_2)} \sum_{(n_{sa} + j_{sa} - k_2)}^{n_{sa} + j_{sa} - k_2} \\
 & \frac{(n_{is} - k_1 - 1)! \cdot (n_{is} - j_s + 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - k_1 - 1)!}{(j_{ik} - k_1 - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDÜZMAYA

$$\sum_{k=l}^{(\quad)} \sum_{(j_s=j_{ik}-j_{sa}^{ik}+1)}$$

$$\sum_{j_{ik}=l_i+n+j_{sa}^{lk}-D-s}^{l_s+j_{sa}^{ik}-l} \sum_{(j_{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\quad)} \sum_{j_i=j_{sa}+s-1}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{is}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{is}+j_{ik}-l_{k1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-j_{sa}^{ik})}^{(\quad)} \sum_{n_s=n_{sa}+j_{sa}^{ik}}$$

$$\frac{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^{ik})! \cdot (n_{is} - j_s - 1)! \cdot (n_{sa} - j_{sa}^{ik})! \cdot (n_{sa} + j_{sa}^{ik})!}{(n_{ik} + j_{ik} - n - l_{k2} - j_{sa}^{ik})! \cdot (n_{is} - j_s - 1)! \cdot (n_{sa} - j_{sa}^{ik})! \cdot (n_{sa} + j_{sa}^{ik})!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D - j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\begin{aligned} & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa} - j_{sa}^{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1) \vee \\ & ((D \geq n < n \wedge l \neq l \wedge l_s \leq D - n + 1 \wedge \\ & 1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge \\ & j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge \\ & l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa} - j_{sa}^{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge \\ & D + s - n < l_i \leq D + l_s + s - n - 1)) \wedge \\ & D \geq n < n \wedge l = l > 0 \wedge \\ & j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge \end{aligned}$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z \mathcal{S}_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_i+n-D-s)} \sum_{(j_s=2)}^{(l_i+n-D-s)}$$

$$\sum_{j_{ik}=l_{ik}+n-D}^{l_{ik}-l+1} \sum_{(j_{sa}=n-D)}^{(l_{sa}-l+1)} \sum_{j_i=n-D}^{l_i-l+1}$$

$$\sum_{n_i=n+}^n \sum_{(n_i-j_{ik}+k_1)}^{(n_i-j_{ik}+k_1)} \sum_{n_{is}+j_s}^{n_{is}+j_s} \sum_{(n_{is}+j_s-k_1)}^{k_1}$$

$$\frac{(n_i - n_{is} - 1)!}{(j_s - 1)! \cdot (n_i - n_{is} - j_s + 1)!}$$

$$\frac{(n_{ik} - k_1 - 1)!}{(j_{ik} - j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!}$$

$$\frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j_{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j_{sa} - s)!}$$

$$\begin{aligned}
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} + \\
 & \sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + 1)}^{(l_s - l + 1)} \\
 & \sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{l_{ik} - l + 1} \sum_{(j^{sa} = j_{ik} + j_{sa} - j_{sa}^{ik})}^{(l_{sa} - l + 1)} \sum_{j_{sa}^{sa} = j_{sa} - j_{sa}^{ik}}^{l_i - l + 1} \\
 & \sum_{n_i = n + k}^n \sum_{(n_{is} = n + j_{ik} - k_1 + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = n + j_{sa} - k_1 + 1)}^{n_{is} + j_{sa}^{ik} - k_1} \\
 & \frac{(n_{ik} + j_{ik} - k_1 - k_2) n_{sa} + j_{sa}^{ik}}{(n_{sa} = n + j_{sa} - k_1 + 1) \cdot (n - j_i + 1)} \\
 & \frac{(n_{is} - k_1 - k_2 - 1)!}{(j_s - 2)! \cdot (n_{is} - j_s + 1)!} \\
 & \frac{(n_{is} - k_1 - k_2 - 1)!}{(j_{ik} - k_1 - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - k_1)!} \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j_{ik} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
 & \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
 & \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} -
 \end{aligned}$$

GÜLDENWA

$$\sum_{k=l}^{(l_s-l+1)} \sum_{(j_s=l_i+n-D-s+1)}^{(l_s-l+1)}$$

$$\sum_{j_{ik}=j_s+j_{sa}^{ik}-1}^{()} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{()} \sum_{j_i=j^{sa}+s-j_{sa}^{ik}}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{i_s}=n+l_k-j_s+1)}^{(n_i-j_s+1)} \sum_{n_{ik}=n_{i_s}-j_{ik}-l_{k_1}}$$

$$\sum_{(n_{sa}=n_{ik}+j_{ik}-l_{k_2})}^{()} \sum_{n_s=n_{sa}+j_s}$$

$$\frac{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^{ik})!}{(n_{ik}-j_{ik}-n-l_{k_2}-j_{sa}^{ik})! \cdot (j_s-s)!} \cdot \frac{(l_s-l-1)!}{(l_s-j_s+1)! \cdot (j_s-2)!} \cdot \frac{(D-l_i)!}{(D-j_i-n-l_i)! \cdot (n-j_i)!}$$

$$((D \geq n < n \wedge l \neq l_i \wedge l_s \leq D - n + 1) \vee$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{ik} + 1 > l_s \wedge l_{ik} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \vee$$

$$(D > n \leq n \wedge l = l_i \wedge l_s \leq D - n + 1 \wedge$$

$$D + l_s + s - n - l_i + 1 \leq l \leq l_i - 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_i - s + 1 > l_s \wedge$$

$$D + s - n < l_i \leq D + l_s + s - n - 1) \wedge$$

$$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=l}^{(l_s-l+1)} \sum_{j_s=2}^{(l_s-l+1)} \frac{1}{(j_s-2)! \cdot (n_i - n_{is} - j_s + 1)!} \cdot \frac{(n_{is} - n_{ik} - \mathbb{k}_1 - 1)!}{(j_s - 1)! \cdot (n_{is} + j_s - n_{ik} - j_{ik} - \mathbb{k}_1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(j_s + l_{ik} - j_{ik} - l_s)! \cdot (j_{ik} - j_s - j_{sa}^{ik} + 1)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j^{sa} - l_{ik})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=l}^{(l_s - l + 1)} \sum_{(j_s = l_i + n - D - s + k)}$$

$$\sum_{j_{ik} = j_s + j_{sa}^{ik} - 1}^{(j_{sa} = j_{ik} + j_{sa}^{ik} - 1)} \sum_{(j_i = j^{sa} + j_{sa}^{ik} - j_{sa})}$$

$$\sum_{n_i = n + k}^n \sum_{(n_i - j_s + 1)}^{(n_i - j_s + 1)} \sum_{(n_{ik} = j_s - j_{ik} - k_1)}$$

$$\sum_{(n_{sa} = j_{sa} + j_{ik} - j^{sa})} \sum_{(n_s = n_{sa} + j^{sa} - j_i)}$$

$$\frac{(n_{ik} + j_{ik} - n - k_2)!}{(n_{sa} + j_{sa} - n - k_2 - 1)! \cdot (n + j_{sa}^s - j_s - s)!}$$

$$\frac{(l_s - l - 1)!}{(l_s - j_s - l + 1)! \cdot (j_s - 2)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$D \geq n < n \wedge l_i = l \wedge l_{sa} = D + s - l_i \wedge$$

$$1 \leq j_{sa} \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - k_1 + 1 = j_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa}^{ik} < j_i \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1}^{\dots} \sum_{l=1}^{\dots} \binom{\dots}{j_s=1}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \binom{\dots}{j^{sa}=j_{sa}} \sum_{j_i=1}^{l_i - l + 1}$$

$$\sum_{n_i=n+k}^n \binom{n_i - j_{ik} - k_1 + 1}{n_{ik} = n_i - j_{ik} + 1}$$

$$\binom{n_{ik} + j_{ik} - j_i}{n_{sa} = n_i - j_{ik} + 1} \binom{n_{sa} - j_i}{n_s = n - j_i + 1}$$

$$\frac{(n_i - j_{ik} - k_1 + 1)!}{(n_i - 2)! \cdot (n_i - n_{ik})! \cdot (n_{ik} + 1)!}$$

$$\frac{(n_{ik} - j_i - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_i - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_i + j_{sa} - l_{sa} - s)!}{(l_i + j_{sa} - j_i - l_{sa})! \cdot (j_i - s)!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=1}^{\dots} \sum_{l=1}^{\dots} \binom{\dots}{j_s=1}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \binom{\dots}{j^{sa}=j_{sa}} \sum_{j_i=1}^{\dots}$$

$$\sum_{n_i=n+k}^n \binom{n_i - j_{ik} - k_1 + 1}{n_{ik} = n_i - j_{ik} + 1}$$

GÜLDENYA

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{\binom{()}{n_s=n_{sa}+j^{sa}-j_i}} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - l_i)!}$$

$$D \geq n < l = l_i \wedge l_s \leq D - n + 1 \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n$$

$$l_i - s + 1 > l_s \wedge$$

$$l_i \leq D + s - n \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^i - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\}$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1} \sum_{\binom{()}{j_s=1}}^{l_i - l + 1}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{\binom{()}{j^{sa}=j_{sa}}} \sum_{j_i=l_i+n-D}^{l_i - l + 1}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i - j_{ik} - \mathbb{k}_1 + 1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_i + j_{sa} - l_s - s)!}{(l_i + j_{sa} - j_i - l_{sa})! \cdot (j_i - s)!}$$

$$\frac{(l_i)!}{(D + j_i - n - l_i)! \cdot (j_i)!}$$

$$\sum_{j_{ik}=j_{sa}}^n \sum_{j_s=1}^{(j_i)}$$

$$\sum_{j_{ik}=j_{sa}}^n \sum_{j_s=1}^{(j_i)}$$

$$\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{(j_i)}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(j_i)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j^{sa})! \cdot (n - s)!}$$

$$\frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D > n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_i - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{\binom{D}{l}} \sum_{j_{sa}=1}^{\binom{D-l}{j_s}} \sum_{j_{ik}=j_{sa}^{ik}}^{\binom{D-l}{j_s}} \sum_{j_i=s}^{l_i-l+1} \frac{(n_i - j_{ik} - k_1 - 1)!}{(n_i - 2)! \cdot (n_i - n_{ik} - j_{ik} - k_1 + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_i - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik})! \cdot (j_{sa} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=1}^{\binom{D}{l}} \sum_{j_{sa}=1}^{\binom{D-l}{j_s}}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{\binom{D-l}{j_s}} \sum_{j_i=s}^{\binom{D-l}{j_s}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{(\cdot)}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(\cdot)}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n - s)!}$$

$$\frac{(D - l_i)}{(D + s - l_i)! (n - s)!}$$

$D \geq n < n \wedge l = l \wedge l_i \leq D + s - n \wedge$

$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + \dots \wedge$

$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i - j_{sa} \wedge$

$l_{ik} - j_{sa}^{ik} + 1 = l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$

$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_2: z \geq 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1}^l \sum_{(j_s=1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{(l_{sa}-l+1)} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - j_{sa})!}{(l_{sa} + j_{sa}^{ik} - j_{sa} - l_{ik})! \cdot (j_{sa})!} \cdot \frac{(D - l_i)!}{(n - l_i - 1)! \cdot (n - j_i)!} \sum_{k=i}^{\binom{()}{l}} \sum_{j_s=1}^{\binom{()}{l}} \sum_{j_{ik}=j_{sa}^{ik}} \sum_{j^{sa}=j_{sa}}^{\binom{()}{l}} \sum_{j_i=s} \sum_{n_i=n+\mathbb{k}}^n \sum_{n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1}^{\binom{()}{l}} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{n_s=n_{sa}+j^{sa}-j_i}^{\binom{()}{l}} \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$n - l_i \wedge l = \binom{()}{l} \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$D \geq n < n \wedge I = \mathbb{k} > 0 \wedge$

$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$

$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$

$s > 4 \wedge s = s + \mathbb{k} \wedge$

$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$

GÜLDÜNYA

$$fz^S_{j_s, j_{ik}, j_{sa}, j_i} = \sum_{k=1}^{(\cdot)} \sum_{(j_s=1)}^{(\cdot)}$$

$$j_{ik}=j \quad \sum_{(j_{sa}=j_i-s)}^{(\cdot)} \sum_{j_i=s}^{(\cdot)}$$

$$n_i=n \quad \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(\cdot)}$$

$$n_{sa}+j_{ik}-j_{sa}-\mathbb{k}_2 \quad \sum_{(n_{sa}+j_{sa}-j_i)}^{(\cdot)}$$

$$\sum_{sa=n-j_{sa}+1}^{(\cdot)} \sum_{(n_s=n-j_i+1)}^{(\cdot)}$$

$$\frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=1}^{(\cdot)} \sum_{(j_s=1)}^{(\cdot)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=s} \sum_{n_i=n+l_k} \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{ik}+j^{sa}-j_i)} \frac{(n_{ik}+j_{ik}-j^{sa}-l_{k_2})!}{(n_{ik}+j_{ik}-n_{ik}-l_{k_2}-j^{sa})! \cdot (n-s)!} \cdot \frac{(n-l_i)!}{(n-s-n+l_i)! \cdot (n-s)!}$$

$$D \geq n < n \wedge l = l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} - j_{sa} \leq j_i \leq \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} - l_i + j_{sa} - s = j_{sa} \wedge$$

$$D \geq n < n \wedge l = l > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa} \leq j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, l_{sa}, j_{sa}^{ik}, l_{sa_2}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \wedge$$

$$l_{k_2}: 2 \wedge l_{k_2} = l_{k_1} + l_{k_2} \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=1} \sum_{(j_s=1)} \sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}} \sum_{n_i=n+l_k} \sum_{(n_{ik}=n+l_k-j_{ik}+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{ik}+j^{sa}-j_i)} \frac{(l_{sa}-l_{l+1})}{(n_{ik}+j_{ik}-n_{ik}-l_{k_2}-j^{sa})! \cdot (n-s)!} \cdot \frac{(n-l_i)!}{(n-s-n+l_i)! \cdot (n-s)!}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=j^{sa}+s-j_{sa}} \sum_{n_i=n+l_k} \sum_{(n_{ik}=n+l_k-j_{ik}+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{ik}+j^{sa}-j_i)} \frac{(l_{sa}-l_{l+1})}{(n_{ik}+j_{ik}-n_{ik}-l_{k_2}-j^{sa})! \cdot (n-s)!} \cdot \frac{(n-l_i)!}{(n-s-n+l_i)! \cdot (n-s)!}$$

$$\sum_{n_i=n+l_k} \sum_{(n_{ik}=n+l_k-j_{ik}+1)} \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{ik}+j^{sa}-j_i)} \frac{(l_{sa}-l_{l+1})}{(n_{ik}+j_{ik}-n_{ik}-l_{k_2}-j^{sa})! \cdot (n-s)!} \cdot \frac{(n-l_i)!}{(n-s-n+l_i)! \cdot (n-s)!}$$

$$\begin{aligned}
& \sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\
& \frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa} - 1)!} \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!} \\
& \frac{(n_s - n - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \\
& \frac{(n - l_s - j_{ik} + 1)!}{(l_{ik} - j_{ik} - l_s - 1)! \cdot (n_{ik} - j_{sa}^{ik})!} \\
& \frac{(D - l_i)!}{(n + j_i - n - l_i)! \cdot (n - j_i)!} \\
& \sum_{k=i}^{l_i} \sum_{(j_s=1)}^{(n)} \\
& \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{(n)} \sum_{j_i=s} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{(n)} \\
& \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{(n)} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \\
& \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}
\end{aligned}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge I = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j_i} = \sum_{k=1}^n \sum_{i=1}^n \binom{()}{j_s=1}$$

$$l_{ik} - i + 1 \binom{()}{j_{ik}=j_{sa}^{ik}+1} \sum_{j_i=j_{sa}^{ik}+s-j_{sa}}^n \binom{()}{j_i=j_{sa}^{ik}+s-j_{sa}}$$

$$\sum_{n_i=n+k}^n \sum_{n_{ik}=n+k-j_{ik}+1}^{(n_i-j_{ik}-k_1+1)} \sum_{n_{sa}=n-j_{sa}+1}^{n_{ik}+j_{ik}-j_{sa}-k_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j_{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - k_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - k_1 + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!}$$

$$\frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{()} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i}^{()}$$

$$\sum_{n_i=n+l}^n \sum_{(n_{ik}=n_i-l-k_1+1)}^{()}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}}^{()} \sum_{(n_s=n_{sa}+j^{sa})}^{()} \frac{(j_s-l-k_2)!}{(n_{ik}+j_{ik}-n-l-k_2-j^{sa})! \cdot (n-s)!} \cdot \frac{(D-l_i)!}{(D+s-n-l_i)! \cdot (n-s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_s \leq j^{sa} - j_{sa}^{ik} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 = l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_{sa} - j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 4 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^i = j_{sa} - 1 \wedge j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^i, l_{sa}, k_1, j_{sa}^{ik}, k_2, j_{sa}^i, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = k_1 + k_2 \wedge$$

$$k_2 \wedge k = k_1 + k_2 \Rightarrow$$

$$fz_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{(l_{sa}-i^{l+1})} \sum_{(j^{sa}=j_{sa})}^{l_i-i^{l+1}} \sum_{j_i=s}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n+l_k-j_{ik}+1)}^{(n_i-j_{ik}-l_{k_1}+1)} \\
 & \sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\
 & \frac{(n_i - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - l_{k_1} + 1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} - j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - j_i - n - j_i - 1)!}{(n_s - j_i - n - j_i - 1)!} \cdot \\
 & \frac{(l_{sa} + j^{sa} - l_{ik} - j_{sa})!}{(l_{sa} + j^{sa} - l_{ik})! \cdot (j^{sa} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_i - l_{sa} - s)!}{(l_{sa} + l_i - j_i - s)! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{\binom{D}{k}} \sum_{(j_s=1)}^{\binom{D}{j_s}} \\
 & \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{\binom{D}{j^{sa}}} \sum_{j_i=s}^{\binom{D}{j_i}} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{\binom{D}{n_{ik}}} \\
 & \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{\binom{D}{n_{sa}}} \\
 & \frac{(n_{ik} + j_{ik} - j_s - s - l_{k_2})!}{(n_{ik} + j_{ik} - n - l_{k_2} - j_{sa}^s)! \cdot (n - s)!}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = {}_i l \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$j_{ik}^{sa}, j_{ik}, j_{sa}^{sa} = \sum_{k=i}^{\binom{()}{}} \sum_{(j_s=1)}$$

$$\sum_{j_{ik}=j^{sa}+j_{sa}^{ik}-j_{sa}} \binom{l_{sa}-i+1}{j_{sa}=j_{sa}} \sum_{l_i=i+1} \sum_{j_i=s}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n+\mathbb{k}-j_{ik}+1)}^{(n_i-j_{ik}-\mathbb{k}_1+1)}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)}$$

$$\frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!}$$

$$\frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!}$$

$$\frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - j_i)!}$$

$$\frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!}$$

$$\frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \cdot \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} + l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \sum_{k=1}^{(j_s)} \sum_{j_{ik}=j_s} \sum_{j_{sa}=j_{sa}} \sum_{j_i=s} \sum_{n_i=n}^n \sum_{j_{sa}=n_{ik}+j_{sa}-\mathbb{k}_2}^{n_i} (n_{ik}=n_i - j_{ik} - \mathbb{k}_1 + 1) \sum_{j_i=s}^{(n_s)} (n_s = n_{sa} + j_{sa} - j_i) \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}$$

$$D \geq n < n \wedge l = l \wedge l_i \leq l + s < n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ls} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_{sa} + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - l_s + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} = l_{ik} \wedge l_i + j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_s = j_s - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_z: z = 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{\dots} \sum_{(j_s=1)}^{(\dots)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{l_{ik}-i+1} \sum_{(j^{sa}=j_{ik}+j_{sa}-j_{sa}^{ik})}^{(\dots)} \sum_{j_i=j^{sa}+s}^{l_i-i+1}$$

$$\frac{\sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n-i+1)}^{(n_i-j_{ik}-k_1+1)} \sum_{n_{sa}=n-i+1}^{(n_{sa}+j_{sa}-j_i)} \dots}{(n-2)! \dots (n_{ik}-i-1)! \dots (j^{sa}-j_{ik}-\dots \cdot (n_{ik}+\dots - n_{sa}-j^{sa})! \dots (n_s-1)! \dots (n_s+j_i-n-1)! \cdot (n-j_i)! \dots (l_{ik}-l_s-j_{sa}^{ik}+1)! \dots (l_{ik}-j_{ik}-l_s+1)! \cdot (j_{ik}-j_{sa}^{ik})! \dots (l_i+j_{sa}-l_{sa}-s)! \dots (j^{sa}+l_i-j_i-l_{sa})! \cdot (j_i+j_{sa}-j^{sa}-s)! \dots (D-l_i)! \dots (D+j_i-n-l_i)! \cdot (n-j_i)!}$$

$$\sum_{k=i}^{\dots} \sum_{(j_s=1)}^{(\dots)}$$

$$\sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})} \sum_{j_i=s}$$

GÜLDENWA

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{\binom{()}{n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1}}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{\binom{()}{n_s=n_{sa}+j^{sa}-j_i}}$$

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j^{sa})! \cdot (n - s)!}$$

$$\frac{(D - l_i)}{(D + s - l_i)! (n - s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + \dots \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i - j_{sa} \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa}$$

$$D \geq n < n \wedge l = \mathbb{k} > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1$$

$$s: \{j_{sa}^s, \dots, \mathbb{k}_1, j_{sa}^{ik}, \mathbb{k}_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + \mathbb{k} \wedge$$

$$\mathbb{k}_2: z \geq 2 \wedge \mathbb{k} = \mathbb{k}_1 + \mathbb{k}_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^l \sum_{\binom{()}{j_s=1}}$$

$$\sum_{j_{ik}=j_{sa}^{lk}}^{l_{ik}-i^{l+1}} \sum_{\binom{()}{j^{sa}=j_i+j_{sa}-s}} \sum_{j_i=s}^{l_i-i^{l+1}}$$

$$\sum_{n_i=n+\mathbb{k}}^n \sum_{\binom{()}{n_{ik}=n+\mathbb{k}-j_{ik}+1}}$$

$$\sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{\binom{()}{n_s=n-j_i+1}}$$

$$\begin{aligned}
& \frac{(n_i - n_{ik} - \mathbb{k}_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - \mathbb{k}_1 + 1)!} \cdot \\
& \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j^{sa})!} \cdot \\
& \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} + j^{sa} - n_s - 1)!} \cdot \\
& \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \\
& \frac{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{sa} - j_{sa}^{ik})!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{sa} - j_{sa}^{ik})!} \cdot \\
& \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - 1)!}{(j_{ik} + l_{sa} - j^{sa} - 1)! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
& \frac{(D - l_i)!}{(D + j_i - l_i)! \cdot (n - j_i)!} \cdot \\
& \sum_{k=i}^{\binom{()}{l}} \sum_{j_s=1}^{\binom{()}{l}} \\
& \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{\binom{()}{l}} \sum_{j_i=s} \\
& \sum_{n_i=n+\mathbb{k}}^n \sum_{(n_{ik}=n_i-j_{ik}-\mathbb{k}_1+1)}^{\binom{()}{l}} \\
& \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-\mathbb{k}_2} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{\binom{()}{l}} \\
& \frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - n - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!} \cdot \\
& \frac{(D - l_i)!}{(D + s - n - l_i)! \cdot (n - s)!}
\end{aligned}$$

$$D \geq n < n \wedge l = \sum_{i=1}^l l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_s + j_{sa}^{ik} - 1 \leq j_{ik} \leq j^{sa} + j_{sa}^{ik} - j_{sa} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + s - j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_s \wedge l_{sa} + j_{sa}^{ik} - j_{sa} > l_{ik} \wedge l_i + j_{sa} - s = l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 0 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa}^{ik} = j_{sa} - 1 \wedge j_{sa}^s < j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^s, \dots, k_1, j_{sa}^{ik}, k_2, j_{sa}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = s + k \wedge$$

$$k_z: z = 2 \wedge k = k_1 + k_2 \Rightarrow$$

$$f_z S_{j_{sa}, j_{ik}, j_{sa}^s, j_{sa}^i} = \sum_{k=1}^{(\cdot)} \sum_{l=1}^{(\cdot)} \sum_{i=1}^{l_{ik}-i+l} \sum_{j_{sa}^{ik}}^{(l_{sa}-i+l)} \sum_{j_{sa}^s}^{(j_{sa}^{ik}+j_{sa}-j_{sa}^{ik})} \sum_{j_{sa}^i}^{(s-j_{sa})} \sum_{n_i=n+k}^{(n_i-j_{ik}-k_1+1)} \sum_{n_{ik}=n+k-j_{ik}+1}^{(n_i-j_{ik}-k_1+1)} \sum_{n_{sa}=n-j_{sa}+1}^{(n_{sa}+j_{sa}-j_i)} \sum_{n_s=n-j_i+1}^{(n_{sa}+j_{sa}-j_i)} \frac{(n_i - n_{ik} - k_1 - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - k_1 + 1)!} \cdot \frac{(n_{ik} - n_{sa} - 1)!}{(j_{sa} - j_{ik} - 1)! \cdot (n_{ik} + j_{ik} - n_{sa} - j_{sa})!} \cdot \frac{(n_{sa} - n_s - 1)!}{(j_i - j_{sa} - 1)! \cdot (n_{sa} + j_{sa} - n_s - j_i)!} \cdot \frac{(n_s - 1)!}{(n_s + j_i - n - 1)! \cdot (n - j_i)!} \cdot \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - j_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \cdot \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} + l_{sa} - j_{sa} - l_{ik})! \cdot (j_{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!}$$

$$\sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{()} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i}^{()}$$

$$\sum_{n_i=n+l}^n \sum_{(n_{ik}=n_i-l-k_1+1)}^{()}$$

$$\sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}}^{()} \sum_{(n_s=n_{sa}+j^{sa})}^{()} \frac{(j_s-l-k_2)!}{(n_{ik}+j_{ik}-l-k_2-j^{sa})! \cdot (n-s)!} \cdot \frac{(D-l_i)!}{(D+s-n-l_i)! \cdot (n-s)!}$$

$$D \geq n < n \wedge l = i \wedge l_i \leq D + s - n \wedge$$

$$1 \leq j_s \leq j_{ik} - j_{sa}^{ik} + 1 \wedge j_{sa}^{ik} - 1 \leq j_s \leq j_{sa}^{ik} \wedge$$

$$j_{ik} + j_{sa} - j_{sa}^{ik} \leq j^{sa} \leq j_i + j_{sa} - s \wedge j^{sa} + j_{sa} \leq j_i \leq n \wedge$$

$$l_{ik} - j_{sa}^{ik} + 1 > l_{sa} + j_{sa}^{ik} - j_{sa} \wedge l_{ik} \wedge l_{sa} - j_{sa} - s > l_{sa} \wedge$$

$$D \geq n < n \wedge l = k > 4 \wedge$$

$$j_{sa} \leq j_{sa}^i - 1 \wedge j_{sa} = j_{sa} - 1 \wedge j_{sa}^{ik} - 1 \wedge$$

$$s: \{j_{sa}^{ik}, l_{k_1}, j_{sa}^{ik}, l_{k_2}, \dots, j_{sa}^i\} \wedge$$

$$s > 4 \wedge s = l + k \wedge$$

$$k_2: l_{k_2} \wedge k = k_1 + k_2 \Rightarrow$$

$$fz^S_{j_s, j_{ik}, j^{sa}, j_i} = \sum_{k=i}^{()} \sum_{l(j_s=1)}^{()}$$

$$\sum_{j_{ik}=j_{sa}^{ik}}^{l_{ik}-l+1} \sum_{(j^{sa}=j_{sa})}^{(l_{sa}-l+1)} \sum_{j_i=s}^{l_{i}-l+1}$$

$$\begin{aligned}
 & \sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n+l_k-j_{ik}+1)}^{(n_i-j_{ik}-l_{k_1}+1)} \\
 & \sum_{n_{sa}=n-j^{sa}+1}^{n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n-j_i+1)}^{(n_{sa}+j^{sa}-j_i)} \\
 & \frac{(n_i - n_{ik} - l_{k_1} - 1)!}{(j_{ik} - 2)! \cdot (n_i - n_{ik} - j_{ik} - l_{k_1} + 1)!} \cdot \\
 & \frac{(n_{ik} - n_{sa} - 1)!}{(j^{sa} - j_{ik} - 1)! \cdot (n_{ik} - n_{sa} - j^{sa})!} \cdot \\
 & \frac{(n_{sa} - n_s - 1)!}{(j_i - j^{sa} - 1)! \cdot (n_{sa} - j^{sa} - n_s - j_i)!} \cdot \\
 & \frac{(n_s - j_i - n - j_i - 1)!}{(n_s - j_i - n - j_i - 1)!} \cdot \\
 & \frac{(l_{ik} - l_s - j_{sa}^{ik} + 1)!}{(l_{ik} - l_s + 1)! \cdot (j_{ik} - j_{sa}^{ik})!} \cdot \\
 & \frac{(l_{sa} + j_{sa}^{ik} - l_{ik} - j_{sa})!}{(j_{ik} - j_{sa} - j_{sa}^{ik} - j_{sa})! \cdot (j^{sa} + j_{sa}^{ik} - j_{ik} - j_{sa})!} \cdot \\
 & \frac{(l_i + j_{sa} - l_{sa} - s)!}{(j^{sa} - l_i - j_i - l_{sa})! \cdot (j_i + j_{sa} - j^{sa} - s)!} \cdot \\
 & \frac{(D - l_i)!}{(D + j_i - n - l_i)! \cdot (n - j_i)!} \cdot \\
 & \sum_{k=l}^{()} \sum_{(j_s=1)}^{()} \\
 & \sum_{j_{ik}=j_{sa}^{ik}} \sum_{(j^{sa}=j_{sa})}^{()} \sum_{j_i=s} \\
 & \sum_{n_i=n+l_k}^n \sum_{(n_{ik}=n_i-j_{ik}-l_{k_1}+1)}^{()} \\
 & \sum_{n_{sa}=n_{ik}+j_{ik}-j^{sa}-l_{k_2}} \sum_{(n_s=n_{sa}+j^{sa}-j_i)}^{()}
 \end{aligned}$$

GÜLDÜZMAYA

$$\frac{(n_{ik} + j_{ik} - j_s - s - \mathbb{k}_2)!}{(n_{ik} + j_{ik} - \mathbf{n} - \mathbb{k}_2 - j_{sa}^s)! \cdot (n - s)!}$$

$$\frac{(D - l_i)!}{(D + s - \mathbf{n} - l_i)! \cdot (n - s)!}$$

GÜLDÜNYA

DİZİN

B

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.1.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.1.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.1.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.2.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.2.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.3.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.3.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bir bağımlı-bir bağımsız durumlu simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.1.1/230-231

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.1.1/187-188

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.1.1/321

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bir bağımlı-bir bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.2.1/230-231

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.2.1/187-188

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.2.1/321

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bir bağımlı-bir bağımsız durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.3.1/230-231

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.3.1/187-188

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.1.3.1/321

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.4.1.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.4.1.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.4.1.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.4.2.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.4.2.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.4.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.4.3.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.4.3.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.1.4.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bir bağımlı-bağımsız durumlu

simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.1/233

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.1/190

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.1.1/324-325

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bir bağımlı-bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.2/233

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.2/190

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.1.2/324-325

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımlı simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.3/233

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.3/190

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.1.3/324-325

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.1.4/233

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.4/190

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.1.4/324-325

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımsız simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.6.2.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.6.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.6.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu

bağımlı simetrisinin son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.1.6.3.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.6.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.6.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin durumuna bağlı

tek kalan simetrik olasılık,
2.3.3.1.1.1.1/118

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.1.1/80-81

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.1.1/165

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin durumuna bağlı

tek kalan simetrik olasılık,
2.3.3.1.1.2.1/118

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.2.1/80-81

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.2.1/165

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin durumuna bağlı

tek kalan simetrik olasılık,
2.3.3.1.1.3.1/118

tek kalan düzgün simetrik olasılık,
2.3.3.2.1.3.1/80-81

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.1.3.1/165

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.1.1.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.1.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.1.1.1/4

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.1.2.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.1.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.1.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu bağımlı
simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.1.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.1.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.1.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.2.1.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.2.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.2.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımsız simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.2.2.1/3-4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.2.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.2.2.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımlı simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.2.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.2.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.2.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.4.1.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.4.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.4.1.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımsız simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.4.2.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.4.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.4.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımlı simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.4.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.4.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.4.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.6.1.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.6.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.6.1.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
bağımsız simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.6.2.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.6.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.6.2.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
bağımlı simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.6.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.6.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.6.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımsız durumlu
simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.7.1.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.7.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.7.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımsız durumlu
bağımsız simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.2.7.2.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.2.7.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.2.7.2.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımlı simetrisinin ilk ve son durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.2.7.3.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.2.7.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.2.7.3.1/4

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
ve herhangi bir durumunun bulunabileceği
olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.2.1.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.2.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.2.1.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu bağımsız
simetrisinin ilk ve herhangi bir durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.1.2.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.1.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.1.2.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu bağımlı
simetrisinin ilk ve herhangi bir durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.1.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.1.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.1.3.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
simetrisinin ilk ve herhangi bir durumunun
bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.2.1.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.2.1.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.2.1.1/7

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımsız simetrisinin ilk ve herhangi bir
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.2.2.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.2.2.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.2.2.1/7

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımlı simetrisinin ilk ve herhangi bir
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.3.2.3.1/4

tek kalan düzgün simetrik olasılık,
2.3.3.2.3.2.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.3.2.3.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu simetrisinin
herhangi iki durumuna bağlı

- tek kalan simetrik olasılık, 2.3.3.1.4.1.1.1/4
- tek kalan düzgün simetrik olasılık, 2.3.3.2.4.1.1.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.4.1.1.1/5
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin herhangi iki durumuna bağlı
- tek kalan simetrik olasılık, 2.3.3.1.4.1.2.1/4
- tek kalan düzgün simetrik olasılık, 2.3.3.2.4.1.2.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.4.1.2.1/5
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin herhangi iki durumuna bağlı
- tek kalan simetrik olasılık, 2.3.3.1.4.1.3.1/4
- tek kalan düzgün simetrik olasılık, 2.3.3.2.4.1.3.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.4.1.3.1/5
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.4.1.1.1/839-840
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.4.1.2.1/839-840
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.4.1.3.1/839-840
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.5.1.1.1/5
- tek kalan düzgün simetrik olasılık, 2.3.3.2.5.1.1.1/4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.5.1.1.1/7
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.5.2.1.1/6
- tek kalan düzgün simetrik olasılık, 2.3.3.2.5.2.1.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.5.2.1.1/10
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.5.2.2.1/6
- tek kalan düzgün simetrik olasılık, 2.3.3.2.5.2.2.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.5.2.2.1/10
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.5.2.3.1/5
- tek kalan düzgün simetrik olasılık, 2.3.3.2.5.2.3.1/3-4
- tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.5.2.3.1/7
- Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre
- tek kalan simetrik olasılık, 2.3.3.1.5.2.3.1/5
- tek kalan düzgün simetrik olasılık, 2.3.3.2.5.2.3.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.5.2.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.1.1.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.1.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.1.2.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.1.2.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.1.3.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.1.3.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.2.1/11

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk ve herhangi iki durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.2.2.1/11

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.2.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk ve herhangi iki

durumunun bulunabileceği olaylara göre herhangi iki duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.8.2.3.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.8.2.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.6.1.1.1/4

tek kalan düzgün simetrik olasılık, 2.3.3.2.6.1.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.6.1.1.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.6.1.2.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.6.1.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.6.1.2.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.6.1.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.6.1.3.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.6.1.3.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.6.2.1.1/6

tek kalan düzgün simetrik olasılık, 2.3.3.2.6.2.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.6.2.1.1/8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.2.2.1/6

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.2.2.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.2.2.1/8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.2.3.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.2.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.2.3.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.4.1.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.4.1.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.4.1.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımsız simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.4.2.1/5-6

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.4.2.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.4.2.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.4.3.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.4.3.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.4.3.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.6.1.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.6.1.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.6.1.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
bağımsız simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.6.2.1/5-6

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.6.2.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.6.2.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.6.3.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.6.3.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.6.3.1/5-6

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.7.1.1/6

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.7.1.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.7.1.1/8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımsız durumlu
bağımsız simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.7.2.1/6

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.7.2.1/4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.7.2.1/8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımsız durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık,
2.3.3.1.6.7.3.1/5

tek kalan düzgün simetrik olasılık,
2.3.3.2.6.7.3.1/3-4

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.6.7.3.1/5

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu simetrisinin ilk
herhangi bir ve son durumunun
bulunabileceği olaylara göre herhangi bir
ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.1.1.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.1.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu bağımsız
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.1.2.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.1.2.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı durumlu bağımlı
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.1.3.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.1.3.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.2.1.1/11

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.2.1.1/11

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımsız simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.2.2.1/11

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.2.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımsız-bağımlı durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.2.3.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.2.3.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.4.1.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.4.1.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.4.2.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.4.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bir bağımsız durumlu
bağımlı simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.4.3.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.4.3.1/11

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
simetrisinin ilk herhangi bir ve son
durumunun bulunabileceği olaylara göre
herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık,
2.3.3.1.9.6.1.1/7

tek kalan düzgün olmayan simetrik
olasılık, 2.3.3.3.9.6.1.1/11

Bağımlı ve bir bağımsız olasılıklı farklı
dizilimsiz bağımlı-bağımsız durumlu
bağımsız simetrisinin ilk herhangi bir ve son

durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.9.6.2.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.9.6.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.9.6.3.1/7

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.9.6.3.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.9.7.1.1/11

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.9.7.1.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.9.7.2.1/11

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.9.7.2.1/11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi bir ve son durumunun bulunabileceği olaylara göre herhangi bir ve son duruma bağlı

tek kalan simetrik olasılık, 2.3.3.1.9.7.3.1/11

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.9.7.3.1/7-8

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.1.1.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.1.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.1.1.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.1.2.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.1.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.1.2.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.1.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.1.3.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.1.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.2.1.1/7

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.2.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.2.1.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.2.2.1/7

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.2.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.2.2.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.2.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.2.3.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.2.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.4.1.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.4.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.4.1.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.4.2.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.4.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.4.2.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.4.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.4.3.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.4.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.6.1.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.6.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.6.1.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.6.2.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.6.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.6.2.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.6.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.6.3.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.6.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.7.1/7

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.7.1.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.7.1.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.7.2.1/7

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.7.2.1/4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.7.2.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre

tek kalan simetrik olasılık, 2.3.3.1.7.7.3.1/5

tek kalan düzgün simetrik olasılık, 2.3.3.2.7.7.3.1/3-4

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.7.7.3.1/7

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.1.1.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.1.1.1/10

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.1.2.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.1.2.1/10

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.1.3.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.1.3.1/10

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.2.1.1/15

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.2.1.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.2.2.1/15-16

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.2.2.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.2.3.1/9-10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.2.3.1/10

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu simetrisinin ilk herhangi iki ve son

durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.4.1.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.4.1.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.4.2.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.4.2.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.4.3.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.4.3.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.6.1.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.6.1.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.6.2.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.6.2.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.6.3.1/9

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.6.3.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.7.1.1/15-16

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.7.1.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.7.2.1/15-16

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.7.2.1/16

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.10.7.3.1/9-10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.10.7.3.1/9-10

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.1.1.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.1.1.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi bir ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.1.2.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.1.2.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son

durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.1.3.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.1.3.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.2.1.1/17-18

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.2.1.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.2.2.1/17

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.2.2.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımlı durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.2.3.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.2.3.1/10-11

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.4.1.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.4.1.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.4.2.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.4.2.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bir bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.4.3.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.4.3.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.6.1.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.6.1.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.6.2.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.6.2.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.6.3.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.6.3.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.7.1.1/17

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.7.1.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımsız simetrisinin ilk herhangi iki ve son

durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.7.2.1/17

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.7.2.1/17-18

Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımsız-bağımsız durumlu bağımlı simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre herhangi iki ve son durumuna bağlı

tek kalan simetrik olasılık, 2.3.3.1.11.7.3.1/10

tek kalan düzgün olmayan simetrik olasılık, 2.3.3.3.11.7.3.1/10-11

VDOİHİ’de Olasılık ve İhtimal konularının tanım ve eşitlikleri verilmektedir. Ayrıca VDOİHİ’de olasılık ve ihtimalin uygulama alanlarına da yer verilmektedir. VDOİHİ konu anlatım ciltleri ve soru, problem ve ispat çözümlerinden oluşmaktadır. Bu cilt bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz olasılık dağılımlardan, bağımsız olasılıklı durumla başlayıp ilk bağımlı durumu bağımlı olasılıklı dağılımın ilk bağımlı durumu hariç dağılımın başlayabileceği diğer bir bağımlı durum olan ve bağımsız olasılıklı durumla başlayan dağılımın aynı ilk bağımlı durumuyla başlayan dağılımlarda, simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılığın, tanım ve eşitliklerinden oluşmaktadır.

VDOİHİ Bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz bağımlı durumlu simetrik olasılık dağılımlarının ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılık kitabında, bağımlı ve bir bağımsız olasılıklı farklı dizilimsiz olasılık dağılımlardan, bağımsız olasılıklı durumla başlayıp ilk bağımlı durumu bağımlı olasılıklı dağılımın ilk bağımlı durumu hariç dağılımın başlayabileceği diğer bir bağımlı durum olan ve bağımsız olasılıklı durumla başlayan dağılımın aynı ilk bağımlı durumuyla başlayan dağılımlarda, simetrisinin ilk herhangi iki ve son durumunun bulunabileceği olaylara göre tek kalan düzgün olmayan simetrik olasılığın, tanım ve eşitlikleri verilmektedir.

VDOİHİ’nin diğer ciltlerinde olduğu gibi bu ciltte de verilen ana eşitlikler, olasılık tablolarından elde edilen verilerle üretilmiştir. Diğer eşitlikler ise ana eşitliklerden teorik yöntemle üretilmiştir. Eşitlik ve tanımların üretilmesinde diğer kaynak kullanılmamıştır.