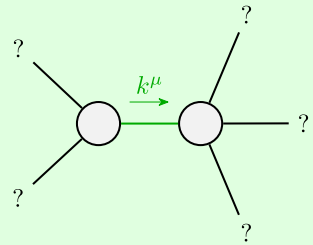


Lagrangian density

$$\begin{aligned}
 & \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi} + 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \\
 & r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \\
 & \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \\
 & r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \\
 & r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \\
 & r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 4 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + 4 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \\
 & 2 r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \\
 & \frac{2}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \frac{4}{3} r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 4 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + \\
 & 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - \\
 & 2 r_1 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} + 2 r_3 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha} - r_5 \partial_1 \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda}^{\alpha}
 \end{aligned}$$



Quadratic pole

Pole residue:	$\frac{1}{r_1 (r_1 - 2 r_3 - r_5) (2 r_3 + r_5)} > 0$
Polarisations:	2

(No massive particles)

Unitarity conditions

$$r_1 < 0 \& \& (r_5 < r_1 - 2 r_3 \parallel r_5 > -2 r_3) \parallel r_1 > 0 \& \& -2 r_3 < r_5 < r_1 - 2 r_3$$

	$\sigma_{1^+}^{\#1} \alpha\beta$	$\sigma_{1^+}^{\#2} \alpha\beta$	$\sigma_{1^-}^{\#1} \alpha$	$\sigma_{1^-}^{\#2} \alpha$
$\sigma_{1^+}^{\#1} \dagger^{\alpha\beta}$	$\frac{1}{k^2 (2 r_3 + r_5)}$	0	0	0
$\sigma_{1^+}^{\#2} \dagger^{\alpha\beta}$	0	0	0	0
$\sigma_{1^-}^{\#1} \dagger^{\alpha}$	0	0	$\frac{1}{k^2 (-r_1 + 2 r_3 + r_5)}$	0
$\sigma_{1^-}^{\#2} \dagger^{\alpha}$	0	0	0	0

$\omega_{0^-}^{\#1}$	0	0
$\omega_{0^+}^{\#1}$	$6 k^2 (-r_1 + r_3)$	0
$\omega_{0^+}^{\#1} \dagger$		
$\omega_{0^-}^{\#1} \dagger$		

Source constraints	#
$\text{SO}(3) \text{ irreps}$	1
$\sigma_{0^-}^{\#1} == 0$	3
$\sigma_{1^-}^{\#2\alpha} == 0$	3
$\sigma_{1^+}^{\#2\alpha\beta} == 0$	5
$\sigma_{2^+}^{\#1\alpha\beta} == 0$	12
Total #:	

	$\sigma_{0^+}^{\#1}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1} \dagger$	$\frac{1}{6 k^2 (-r_1 + r_3)}$	0
$\sigma_{0^-}^{\#1} \dagger$	0	0

$\omega_{2^+}^{\#1} \alpha\beta$	0	$k^2 r_1$
$\omega_{2^+}^{\#1} \dagger^{\alpha\beta}$	0	0
$\omega_{2^-}^{\#1} \alpha\beta\chi$		
$\omega_{2^-}^{\#1} \dagger^{\alpha\beta\chi}$		

	$\omega_{1^+}^{\#1} \alpha\beta$	$\omega_{1^+}^{\#2} \alpha\beta$	$\omega_{1^-}^{\#1} \alpha$	$\omega_{1^-}^{\#2} \alpha$
$\omega_{1^+}^{\#1} \dagger^{\alpha\beta}$	$k^2 (2 r_3 + r_5)$	0	0	0
$\omega_{1^+}^{\#2} \dagger^{\alpha\beta}$	0	0	0	0
$\omega_{1^-}^{\#1} \dagger^{\alpha}$	0	0	$k^2 (-r_1 + 2 r_3 + r_5)$	0
$\omega_{1^-}^{\#2} \dagger^{\alpha}$	0	0	0	0

$\sigma_{2^+}^{\#1} \alpha\beta$	0	$\frac{1}{k^2 r_1}$
$\sigma_{2^+}^{\#1} \dagger^{\alpha\beta}$	0	0
$\sigma_{2^-}^{\#1} \alpha\beta\chi$		
$\sigma_{2^-}^{\#1} \dagger^{\alpha\beta\chi}$		