

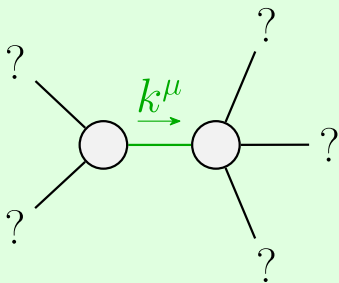
Lagrangian density

$$\begin{aligned}
 & -\frac{1}{2} r_3 \partial_i \omega^{\kappa\lambda}{}_{\kappa} \partial' \omega_{\lambda}^{\alpha}{}_{\alpha} - r_5 \partial_i \omega^{\kappa\lambda}{}_{\kappa} \partial' \omega_{\lambda}^{\alpha}{}_{\alpha} + \frac{1}{2} r_3 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial_{\kappa} \omega^{\theta\kappa\lambda}{}_{\lambda} - \\
 & r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial_{\kappa} \omega^{\theta\kappa\lambda}{}_{\lambda} - \frac{1}{2} r_3 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda}{}_{\lambda} + r_5 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda}{}_{\lambda} - \\
 & \frac{1}{2} r_3 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta}{}_{\theta} - r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta}{}_{\theta} + r_3 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta}{}_{\theta} + \\
 & 2 r_5 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta}{}_{\theta} - 4 r_3 \partial^{\beta} \omega_{\lambda}^{\lambda\alpha}{}_{\alpha} \partial_{\lambda} \omega_{\alpha\beta}{}_{\beta} - \frac{1}{2} r_3 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial^{\lambda} \omega^{\theta\kappa}{}_{\kappa} + \\
 & r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha}{}_{\theta} \partial^{\lambda} \omega^{\theta\kappa}{}_{\kappa} + \frac{1}{2} r_3 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial^{\lambda} \omega^{\theta\kappa}{}_{\kappa} - r_5 \partial_{\theta} \omega_{\lambda}^{\alpha}{}_{\alpha} \partial^{\lambda} \omega^{\theta\kappa}{}_{\kappa}
 \end{aligned}$$

Added source term: $\omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$

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

	$\omega_{2^{+}\alpha\beta\chi}^{\#1}$	$\omega_{2^{+}\alpha\beta\chi}^{\#2}$
$\omega_{2^{+}\alpha\beta\chi}^{\#1}$	0	$-\frac{3k^2 r_3}{2}$
$\omega_{2^{-}\alpha\beta\chi}^{\#1}$	0	0



Quadratic pole

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

Polarisations: 2

Unitarity conditions

$$r_3 < 0 \&\& (r_5 < -\frac{r_3}{2} \parallel r_5 > -2r_3) \parallel r_3 > 0 \&\& -2r_3 < r_5 < -\frac{r_3}{2}$$

(No massive particles)

Source constraints	SO(3) irreps	#
$\sigma_0^{\#1} = 0$	$\sigma_0^{\#1} = 0$	1
$\sigma_0^{\#1} = 0$	$\sigma_0^{\#1} = 0$	1
$\sigma_1^{\#2\alpha} = 0$	$\sigma_1^{\#2\alpha} = 0$	3
$\sigma_1^{\#2\alpha\beta} = 0$	$\sigma_1^{\#2\alpha\beta} = 0$	3
$\sigma_2^{\#1\alpha\beta\chi} = 0$	$\sigma_2^{\#1\alpha\beta\chi} = 0$	5
Total #:		13

	$\sigma_{2^{+}\alpha\beta}^{\#1}$	$\sigma_{2^{-}\alpha\beta\chi}^{\#1}$
$\sigma_{2^{+}\dagger\alpha\beta}^{\#1}$	$-\frac{2}{3k^2 r_3}$	0
$\sigma_{2^{-}\dagger\alpha\beta\chi}^{\#1}$	0	0

	$\sigma_{0^{+}\dagger}^{\#1}$	$\sigma_{0^{-}\dagger}^{\#1}$
$\sigma_{0^{+}\dagger}^{\#1}$	0	0
$\sigma_{0^{-}\dagger}^{\#1}$	0	0

	$\omega_{0^{+}\dagger}^{\#1}$	$\omega_{0^{-}\dagger}^{\#1}$
$\omega_{0^{+}\dagger}^{\#1}$	0	0
$\omega_{0^{-}\dagger}^{\#1}$	0	0

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