

Lagrangian density

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

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

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

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

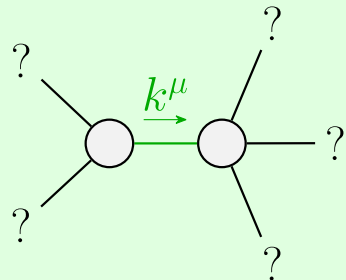
	$\sigma_{2^+}^{\#1\alpha\beta}$	$\sigma_{2^-}^{\#1\alpha\beta\chi}$
$\sigma_{2^+}^{\#1\alpha\beta}$	$-\frac{2}{3k^2 r_3}$	0
$\sigma_{2^-}^{\#1\alpha\beta\chi}$	0	0

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

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

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

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