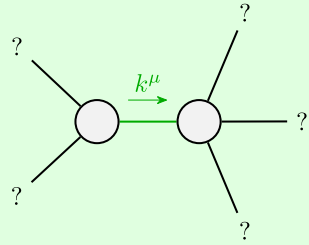


Lagrangian density

$$\begin{aligned} & \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi} - r_5 \partial_\lambda \omega^{\kappa\lambda}{}_\kappa \partial'_\lambda \omega^\alpha{}_\alpha - \frac{2}{3} r_1 \partial^\beta \omega^{\theta\alpha}{}_\kappa \partial_\theta \omega^\kappa{}_\beta - \frac{2}{3} r_1 \partial_\theta \omega^\kappa{}_\alpha \partial_\kappa \omega^{\alpha\beta\theta} + \\ & \frac{2}{3} r_1 \partial_\theta \omega^\kappa{}_\alpha \partial_\kappa \omega^{\theta\alpha\beta} - r_5 \partial_\alpha \omega^\alpha{}_\lambda \partial_\theta \omega^{\theta\kappa\lambda} + r_5 \partial_\theta \omega^\alpha{}_\lambda \partial_\kappa \omega^{\theta\kappa\lambda} - r_5 \partial_\alpha \omega^\alpha{}_\lambda \partial_\theta \omega^{\kappa\lambda\theta} + \\ & 2 r_5 \partial_\theta \omega^\alpha{}_\lambda \partial_\kappa \omega^{\kappa\lambda\theta} + \frac{2}{3} r_1 \partial_\kappa \omega^{\alpha\beta\theta} \partial^\kappa \omega_{\alpha\beta\theta} - \frac{2}{3} r_1 \partial_\kappa \omega^{\theta\alpha\beta} \partial^\kappa \omega_{\alpha\beta\theta} + \\ & \frac{2}{3} r_1 \partial^\beta \omega^\alpha{}_\lambda \partial_\lambda \omega^{\alpha\beta}{}_\beta - \frac{8}{3} r_1 \partial^\beta \omega^\lambda{}_\alpha \partial_\lambda \omega^{\alpha\beta}{}_\beta + r_5 \partial_\alpha \omega^\alpha{}_\lambda \partial^\lambda \omega^{\theta\kappa}{}_\kappa - r_5 \partial_\theta \omega^\alpha{}_\lambda \partial^\lambda \omega^{\theta\kappa}{}_\kappa \end{aligned}$$



Quadratic pole

Pole residue:	$-\frac{1}{r_1(r_1+r_5)(2r_1+r_5)} > 0$
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Polarisations:	2
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(No massive particles)

Unitarity conditions

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

$$\begin{array}{cc} \omega_{0+}^{\#1} & \omega_{0-}^{\#1} \\ \omega_{0+}^{\#1} \dagger & \omega_{0-}^{\#1} \dagger \end{array} \begin{array}{cc} 0 & 0 \\ 0 & 0 \end{array}$$

$$\begin{array}{cc} \sigma_{0+}^{\#1} \dagger & \sigma_{0-}^{\#1} \\ \sigma_{0+}^{\#1} \dagger & \sigma_{0-}^{\#1} \end{array} \begin{array}{cc} 0 & 0 \\ 0 & 0 \end{array}$$

Source constraints	#
SO(3) irreps	
$\sigma_{0-}^{\#1} == 0$	1
$\sigma_{0+}^{\#1} == 0$	1
$\sigma_{1-}^{\#2\alpha} == 0$	3
$\sigma_{1+}^{\#2\alpha\beta} == 0$	3
$\sigma_{2+}^{\#1\alpha\beta} == 0$	5
Total #:	13

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

$$\begin{array}{cc} \sigma_{2+}^{\#1}{}_{\alpha\beta} & \sigma_{2-}^{\#1}{}_{\alpha\beta\chi} \\ \sigma_{2+}^{\#1} \dagger^{\alpha\beta} & \sigma_{2-}^{\#1} \dagger^{\alpha\beta\chi} \end{array} \begin{array}{cc} 0 & \frac{1}{k^2 r_1} \\ 0 & 0 \end{array}$$

$$\begin{array}{cc} \omega_{2+}^{\#1}{}_{\alpha\beta} & \omega_{2-}^{\#1}{}_{\alpha\beta\chi} \\ \omega_{2+}^{\#1} \dagger^{\alpha\beta} & \omega_{2-}^{\#1} \dagger^{\alpha\beta\chi} \end{array} \begin{array}{cc} 0 & k^2 r_1 \\ 0 & 0 \end{array}$$

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