

	$\omega_{0+}^{\#1}$	$f_{0+}^{\#1}$	$f_{0+}^{\#2}$	$\omega_{0-}^{\#1}$
$\omega_{0+}^{\#1} +$	$t_3$	$-i \sqrt{2} k t_3$	0	0
$f_{0+}^{\#1} +$	$i \sqrt{2} k t_3$	$2 k^2 t_3$	0	0
$f_{0+}^{\#2} +$	0	0	0	0
$\omega_{0-}^{\#1} +$	0	0	0	0

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

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

Lagrangian density

$$\begin{aligned} &\frac{2}{3} t_3 \omega_{\lambda'}^{\alpha'} \omega_{\kappa\alpha}^{\kappa} - r_5 \partial_{\lambda} \omega_{\kappa}^{\kappa\lambda} \partial' \omega_{\lambda \alpha}^{\alpha} - \frac{2}{3} r_1 \partial^{\beta} \omega_{\kappa}^{\theta\alpha} \partial_{\theta} \omega_{\alpha\beta}^{\kappa} - \\ &\frac{2}{3} r_1 \partial_{\theta} \omega_{\alpha\beta}^{\kappa} \partial_{\kappa} \omega^{\alpha\beta\theta} + \frac{2}{3} r_1 \partial_{\theta} \omega_{\alpha\beta}^{\kappa} \partial_{\kappa} \omega^{\theta\alpha\beta} - r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta} + \\ &r_5 \partial_{\theta} \omega_{\lambda \alpha}^{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda} - r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta} + 2 r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta} - \\ &\frac{2}{3} t_3 \omega_{\kappa\alpha}^{\alpha} \partial^{\kappa} f'_{\lambda'} - \frac{2}{3} t_3 \omega_{\kappa\lambda}^{\lambda} \partial^{\kappa} f'_{\lambda'} - \frac{4}{3} t_3 \partial^{\alpha} f_{\kappa\alpha} \partial^{\kappa} f'_{\lambda'} + \frac{2}{3} t_3 \partial_{\kappa} f_{\lambda}^{\lambda} \partial^{\kappa} f'_{\lambda'} + \\ &\frac{2}{3} t_3 \omega_{\lambda\alpha}^{\alpha} \partial^{\kappa} f'_{\kappa} + \frac{2}{3} t_3 \omega_{\lambda}^{\lambda} \partial^{\kappa} f'_{\kappa} + \frac{2}{3} t_3 \partial^{\alpha} f_{\alpha}^{\lambda} \partial^{\kappa} f_{\lambda\kappa} + \\ &\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_{\lambda'}^{\alpha\lambda} \partial_{\lambda} \omega_{\alpha\beta}^{\beta} - \\ &\frac{8}{3} r_1 \partial^{\beta} \omega_{\lambda'}^{\lambda\alpha} \partial_{\lambda} \omega_{\alpha\beta}^{\beta} + r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega^{\theta\kappa}_{\kappa} - r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega^{\theta\kappa}_{\kappa} \end{aligned}$$

Added source term:

$$f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$$

	$\omega_{1+}^{\#1}{}_{\alpha\beta}$	$\omega_{1+}^{\#2}{}_{\alpha\beta}$	$f_{1+}^{\#1}{}_{\alpha\beta}$	$\omega_{1-}^{\#1}{}_{\alpha}$	$\omega_{1-}^{\#2}{}_{\alpha}$	$f_{1-}^{\#1}{}_{\alpha}$	$f_{1-}^{\#2}{}_{\alpha}$
$\omega_{1+}^{\#1} +^{\alpha\beta}$	$k^2 (2 r_1 + r_5)$	0	0	0	0	0	0
$\omega_{1+}^{\#2} +^{\alpha\beta}$	0	0	0	0	0	0	0
$f_{1+}^{\#1} +^{\alpha\beta}$	0	0	0	0	0	0	0
$\omega_{1-}^{\#1} +^{\alpha}$	0	0	0	$k^2 (r_1 + r_5) + \frac{2 t_3}{3}$	$-\frac{\sqrt{2} t_3}{3}$	0	$-\frac{2}{3} i k t_3$
$\omega_{1-}^{\#2} +^{\alpha}$	0	0	0	$-\frac{\sqrt{2} t_3}{3}$	$\frac{t_3}{3}$	0	$\frac{1}{3} i \sqrt{2} k t_3$
$f_{1-}^{\#1} +^{\alpha}$	0	0	0	0	0	0	0
$f_{1-}^{\#2} +^{\alpha}$	0	0	0	$\frac{2 i k t_3}{3}$	$-\frac{1}{3} i \sqrt{2} k t_3$	0	$\frac{2 k^2 t_3}{3}$

Source constraints

SO(3) irreps	#
$\sigma_0^{\#1} == 0$	1
$\tau_0^{\#2} == 0$	1
$\tau_0^{\#1} - 2 i k \sigma_0^{\#1} == 0$	1
$\tau_1^{\#2\alpha} + 2 i k \sigma_1^{\#2\alpha} == 0$	3
$\tau_1^{\#1\alpha} == 0$	3
$\tau_{1+}^{\#1\alpha\beta} == 0$	3
$\sigma_{1+}^{\#2\alpha\beta} == 0$	3
$\tau_{2+}^{\#1\alpha\beta} == 0$	5
$\sigma_{2+}^{\#1\alpha\beta} == 0$	5
Total #:	25

	$\sigma_{0+}^{\#1}$	$\tau_{0+}^{\#1}$	$\tau_{0+}^{\#2}$	$\sigma_{0-}^{\#1}$
$\sigma_{0+}^{\#1} +$	$\frac{1}{(1+2 k^2)^2 t_3}$	$-\frac{i \sqrt{2} k}{(1+2 k^2)^2 t_3}$	0	0
$\tau_{0+}^{\#1} +$	$\frac{i \sqrt{2} k}{(1+2 k^2)^2 t_3}$	$\frac{2 k^2}{(1+2 k^2)^2 t_3}$	0	0
$\tau_{0+}^{\#2} +$	0	0	0	0
$\sigma_{0-}^{\#1} +$	0	0	0	0

(No massive particles)

Unitarity conditions

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

Quadratic pole	
Pole residue:	$-\frac{1}{r_1 (r_1 + r_5) (2 r_1 + r_5) p^2} > 0$
Polarisations:	2