

Source constraints	
SO(3) irreps	#
$\tau_{0+}^{\#2} == 0$	1
$\tau_{0+}^{\#1} == 0$	1
$\tau_{1-}^{\#2\alpha} + 2i k \sigma_{1-}^{\#2\alpha} == 0$	3
$\tau_{1-}^{\#1\alpha} == 0$	3
$\tau_{1+}^{\#1\alpha\beta} + i k \sigma_{1+}^{\#2\alpha\beta} == 0$	3
$\tau_{2+}^{\#1\alpha\beta} - 2i k \sigma_{2+}^{\#1\alpha\beta} == 0$	5
Total #:	16

$\omega_{2+}^{\#1} + \alpha\beta$	$\frac{t_1}{2}$	$f_{2+}^{\#1} + \alpha\beta$	$\frac{i k t_1}{\sqrt{2}}$	$\omega_{2-}^{\#1} + \alpha\beta\chi$	0
$\omega_{2+}^{\#1} + \alpha\beta$	2	$f_{2+}^{\#1} + \alpha\beta$	$\frac{i k t_1}{\sqrt{2}}$	$\omega_{2-}^{\#1} + \alpha\beta\chi$	0
$\omega_{2+}^{\#1} + \alpha\beta\chi$	0	$f_{2+}^{\#1} + \alpha\beta$	$k^2 t_1$	$\omega_{2-}^{\#1} + \alpha\beta\chi$	$k^2 r_1 + \frac{t_1}{2}$

$\sigma_{2+}^{\#1} + \alpha\beta$	$\frac{2}{(1+2k^2)^2 t_1}$	$\tau_{2+}^{\#1} + \alpha\beta$	$\frac{2i\sqrt{2}k}{(1+2k^2)^2 t_1}$	$\sigma_{2-}^{\#1} + \alpha\beta\chi$	0
$\tau_{2+}^{\#1} + \alpha\beta$	$\frac{2i\sqrt{2}k}{(1+2k^2)^2 t_1}$	$\tau_{2+}^{\#1} + \alpha\beta$	$\frac{4k^2}{(1+2k^2)^2 t_1}$	$\tau_{2+}^{\#1} + \alpha\beta$	0
$\sigma_{2-}^{\#1} + \alpha\beta\chi$	0	$\tau_{2+}^{\#1} + \alpha\beta$	0	$\sigma_{2-}^{\#1} + \alpha\beta\chi$	$\frac{2}{2k^2 r_1 + t_1}$

$\omega_{0+}^{\#1} +$	$6k^2(-r_1 + r_3)$	$f_{0+}^{\#1} +$	0	$f_{0+}^{\#2} +$	0	$\omega_{0-}^{\#1} +$	0
$f_{0+}^{\#1} +$	0	$f_{0+}^{\#1} +$	0	$f_{0+}^{\#2} +$	0	$\omega_{0-}^{\#1} +$	0
$f_{0+}^{\#2} +$	0	$f_{0+}^{\#1} +$	0	$f_{0+}^{\#2} +$	0	$\omega_{0-}^{\#1} +$	0
$\omega_{0-}^{\#1} +$	0	$f_{0+}^{\#1} +$	0	$f_{0+}^{\#2} +$	0	$\omega_{0-}^{\#1} +$	$-t_1$

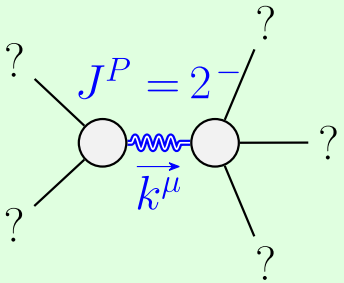
$\sigma_{0+}^{\#1} +$	$\frac{1}{6k^2(-r_1 + r_3)}$	$\tau_{0+}^{\#1} +$	0	$\tau_{0+}^{\#2} +$	0	$\sigma_{0-}^{\#1} +$	0
$\sigma_{0+}^{\#1} +$	0	$\tau_{0+}^{\#1} +$	0	$\tau_{0+}^{\#2} +$	0	$\sigma_{0-}^{\#1} +$	0
$\tau_{0+}^{\#2} +$	0	$\tau_{0+}^{\#1} +$	0	$\tau_{0+}^{\#2} +$	0	$\sigma_{0-}^{\#1} +$	0
$\sigma_{0-}^{\#1} +$	0	$\tau_{0+}^{\#1} +$	0	$\tau_{0+}^{\#2} +$	0	$\sigma_{0-}^{\#1} +$	$-\frac{1}{t_1}$

### Lagrangian density

$$\begin{aligned}
& -\frac{1}{3} t_1 \omega_{\lambda}^{\alpha\lambda} \omega_{\kappa\alpha}^{\kappa} - t_1 \omega_{\lambda}^{\kappa\lambda} \omega_{\kappa\lambda}^{\lambda} + 2 r_1 \partial_{\lambda} \omega^{\kappa\lambda}_{\kappa} \partial' \omega_{\lambda}^{\alpha}_{\alpha} - 2 r_3 \partial_{\lambda} \omega^{\kappa\lambda}_{\kappa} \partial' \omega_{\lambda}^{\alpha}_{\alpha} - \\
& r_5 \partial_{\lambda} \omega^{\kappa\lambda}_{\kappa} \partial' \omega_{\lambda}^{\alpha}_{\alpha} - \frac{2}{3} r_1 \partial^{\beta} \omega^{\theta\alpha}_{\kappa} \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} - 2 r_1 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\theta\kappa\lambda} + 2 r_3 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\theta\kappa\lambda} - \\
& r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\theta\kappa\lambda} + 2 r_1 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda} - 2 r_3 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda} + \\
& r_5 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\theta\kappa\lambda} + 2 r_1 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta} - 2 r_3 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta} - \\
& r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial_{\kappa} \omega^{\kappa\lambda\theta} - 4 r_1 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta} + 4 r_3 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta} + \\
& 2 r_5 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial_{\kappa} \omega^{\kappa\lambda\theta} - \frac{1}{2} t_1 \partial^{\alpha} f_{\theta\kappa} \partial^{\kappa} f_{\alpha}^{\theta} - \frac{1}{2} t_1 \partial^{\alpha} f_{\kappa\theta} \partial^{\kappa} f_{\alpha}^{\theta} - \\
& \frac{1}{2} t_1 \partial^{\alpha} f_{\kappa}^{\lambda} \partial^{\kappa} f_{\alpha\lambda} + \frac{1}{3} t_1 \omega_{\kappa\alpha}^{\alpha} \partial^{\kappa} f'_{\lambda} + \frac{1}{3} t_1 \omega_{\kappa\lambda}^{\lambda} \partial^{\kappa} f'_{\lambda} + \frac{2}{3} t_1 \partial^{\alpha} f_{\kappa\alpha} \partial^{\kappa} f'_{\lambda} - \\
& \frac{1}{3} t_1 \partial_{\kappa} f_{\lambda}^{\lambda} \partial^{\kappa} f'_{\lambda} + 2 t_1 \omega_{\lambda\kappa\theta} \partial^{\kappa} f'^{\theta} - \frac{1}{3} t_1 \omega_{\lambda\alpha}^{\alpha} \partial^{\kappa} f'_{\kappa} - \frac{1}{3} t_1 \omega_{\lambda\lambda}^{\lambda} \partial^{\kappa} f'_{\kappa} + \\
& \frac{1}{2} t_1 \partial^{\alpha} f_{\kappa}^{\lambda} \partial^{\kappa} f_{\lambda\alpha} + \frac{1}{2} t_1 \partial_{\kappa} f_{\theta}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} + \frac{1}{2} t_1 \partial_{\kappa} f_{\theta}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} - \\
& \frac{1}{3} t_1 \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}^{\lambda} + \frac{4}{3} r_1 \partial^{\beta} \omega_{\lambda}^{\lambda\alpha} \partial_{\lambda} \omega_{\alpha\beta}^{\lambda} - 4 r_3 \partial^{\beta} \omega_{\lambda}^{\lambda\alpha} \partial_{\lambda} \omega_{\alpha\beta}^{\lambda} + \\
& 2 r_1 \partial_{\alpha} \omega_{\lambda}^{\alpha}_{\theta} \partial^{\lambda} \omega^{\theta\kappa}_{\kappa} - 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} - \\
& 2 r_1 \partial_{\theta} \omega_{\lambda}^{\alpha}_{\alpha} \partial^{\lambda} \omega^{\theta\kappa}_{\kappa} + 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}$$

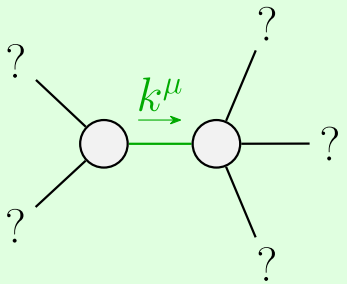
Added source term:  $f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$

	$\omega_{1+}^{\#1} + \alpha\beta$	$\omega_{1+}^{\#2} + \alpha\beta$	$f_{1+}^{\#1} + \alpha\beta$	$\omega_{1-}^{\#1} + \alpha$	$\omega_{1-}^{\#2} + \alpha$	$f_{1-}^{\#1} + \alpha$	$f_{1-}^{\#2} + \alpha$
$\omega_{1+}^{\#1} + \alpha\beta$	$k^2(2r_3 + r_5) - \frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{i k t_1}{\sqrt{2}}$	0	0	0	0
$\omega_{1+}^{\#2} + \alpha\beta$	$-\frac{t_1}{\sqrt{2}}$	0	0	0	0	0	0
$f_{1+}^{\#1} + \alpha\beta$	$\frac{i k t_1}{\sqrt{2}}$	0	0	0	0	0	0
$\omega_{1-}^{\#1} + \alpha$	0	0	0	$k^2(-r_1 + 2r_3 + r_5) + \frac{t_1}{6}$	$\frac{t_1}{3\sqrt{2}}$	0	$\frac{i k t_1}{3}$
$\omega_{1-}^{\#2} + \alpha$	0	0	0	$\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	0	$\frac{1}{3} i \sqrt{2} k t_1$
$f_{1-}^{\#1} + \alpha$	0	0	0	0	0	0	0
$f_{1-}^{\#2} + \alpha$	0	0	0	$-\frac{1}{3} i k t_1$	$-\frac{1}{3} i \sqrt{2} k t_1$	0	$\frac{2k^2 t_1}{3}$



### Massive particle

Pole residue:	$-\frac{1}{r_1} > 0$
Polarisations:	5
Square mass:	$-\frac{t_1}{2r_1} > 0$
Spin:	2
Parity:	Odd



### Quadratic pole

Pole residue:	$\frac{1}{(r_1 - 2r_3 - r_5)t_1^2} > 0$
Polarisations:	2

### Unitarity conditions

$$r_1 < 0 \ \&\& \ r_5 < r_1 - 2r_3 \ \&\& \ t_1 > 0$$