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

Lagrangian density

$$
\begin{aligned}
&-\tfrac{1}{3} t_1\, \omega_{,}{}^{\alpha\prime}\, \omega_{\kappa\alpha}{}^{\kappa} - t_1\, \omega_{,}{}^{\kappa\lambda}\, \omega_{\kappa\lambda}{}^{\prime} - 2 r_3\, \partial_{,} \omega^{\kappa\lambda}{}_{\kappa}\, \partial^{\prime} \omega_{\lambda}{}^{\alpha}{}_{\alpha} - r_5\, \partial_{,} \omega^{\kappa\lambda}{}_{\kappa}\, \partial^{\prime} \omega_{\lambda}{}^{\alpha}{}_{\alpha} + \\
&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_3\, \partial_{\theta} \omega_{\lambda}{}^{\alpha}{}_{\alpha}\, \partial_{\kappa} \omega^{\kappa\lambda\theta} - r_5\, \partial_{\alpha} \omega_{\lambda}{}^{\alpha}{}_{\theta}\, \partial_{\kappa} \omega^{\kappa\lambda\theta} + \\
&r_5\, \partial_{\theta} \omega_{\lambda}{}^{\alpha}{}_{\alpha}\, \partial_{\kappa} \omega^{\theta\kappa\lambda} - 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_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} - \tfrac{1}{2} t_1\, \partial^{\alpha} f_{\theta\kappa}\, \partial^{\kappa} f_{\alpha}{}^{\theta} - \\
&\tfrac{1}{2} t_1\, \partial^{\alpha} f_{\kappa\theta}\, \partial^{\kappa} f_{\alpha}{}^{\theta} - \tfrac{1}{2} t_1\, \partial^{\alpha} f^{\lambda}{}_{\kappa}\, \partial^{\kappa} f_{\alpha\lambda} + \tfrac{1}{3} t_1\, \omega_{\kappa\alpha}{}^{\alpha}\, \partial^{\kappa} f_{,}{}^{\prime} + \tfrac{1}{3} t_1\, \omega_{\kappa\lambda}{}^{\lambda}\, \partial^{\kappa} f_{,}{}^{\prime} + \\
&\tfrac{2}{3} t_1\, \partial^{\alpha} f_{\kappa\alpha}\, \partial^{\kappa} f_{,}{}^{\prime} - \tfrac{1}{3} t_1\, \partial_{\kappa} f^{\lambda}{}_{\lambda}\, \partial^{\kappa} f_{,}{}^{\prime} + 2 t_1\, \omega_{\iota\kappa\theta}\, \partial^{\kappa} f^{\iota\theta} - \tfrac{1}{3} t_1\, \omega_{\iota\alpha}{}^{\alpha}\, \partial^{\kappa} f_{\kappa}{}^{\prime} - \\
&\tfrac{1}{3} t_1\, \omega_{\lambda}{}^{\lambda}{}_{\kappa}\, \partial^{\kappa} f^{\prime}{}_{\kappa} + \tfrac{1}{2} t_1\, \partial^{\alpha} f^{\lambda}{}_{\kappa}\, \partial^{\kappa} f_{\lambda\alpha} + \tfrac{1}{2} t_1\, \partial_{\kappa} f_{\theta}{}^{\lambda}\, \partial^{\kappa} f_{\lambda}{}^{\theta} + \tfrac{1}{2} t_1\, \partial_{\kappa} f^{\lambda}{}_{\theta}\, \partial^{\kappa} f_{\lambda}{}^{\theta} - \\
&\tfrac{1}{3} t_1\, \partial^{\alpha} f^{\lambda}{}_{\alpha}\, \partial^{\kappa} f_{\lambda\kappa} - 4 r_3\, \partial^{\beta} \omega_{,}{}^{\lambda\alpha}\, \partial_{\lambda} \omega_{\alpha\beta}{}^{\prime} - 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_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: $f^{\alpha\beta}\, \tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi}$

	$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	0	$-\frac{\sqrt{2}}{t_1 + k^2 t_1}$	$-\frac{i\sqrt{2}\, k}{t_1 + k^2 t_1}$	0	0	0	0
$\sigma_{1^+}^{\#2}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{\sqrt{2}}{t_1 + k^2 t_1}$	$\frac{-2 k^2 (2 r_3 + r_5) + t_1}{(1 + k^2)^2 t_1{}^2}$	$\frac{-2 i k^3 (2 r_3 + r_5) + i k t_1}{(1 + k^2)^2 t_1{}^2}$	0	0	0	0
$\tau_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{i\sqrt{2}\, k}{t_1 + k^2 t_1}$	$\frac{i (2 k^3 (2 r_3 + r_5) - k t_1)}{(1 + k^2)^2 t_1{}^2}$	$\frac{-2 k^4 (2 r_3 + r_5) + k^2 t_1}{(1 + k^2)^2 t_1{}^2}$	0	0	0	0
$\sigma_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	0	$\frac{1}{k^2 (2 r_3 + r_5)}$	$-\frac{1}{\sqrt{2}\, (k^2 + 2 k^4) (2 r_3 + r_5)}$	0	$-\frac{i}{k (1 + 2 k^2) (2 r_3 + r_5)}$
$\sigma_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	0	$-\frac{1}{\sqrt{2}\, (k^2 + 2 k^4) (2 r_3 + r_5)}$	$\frac{6 k^2 (2 r_3 + r_5) + t_1}{2 (k + 2 k^3)^2 (2 r_3 + r_5) t_1}$	0	$\frac{i (6 k^2 (2 r_3 + r_5) + t_1)}{\sqrt{2}\, k (1 + 2 k^2)^2 (2 r_3 + r_5) t_1}$
$\tau_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	0	$\frac{i}{k (1 + 2 k^2) (2 r_3 + r_5)}$	$-\frac{i (6 k^2 (2 r_3 + r_5) + t_1)}{\sqrt{2}\, k (1 + 2 k^2)^2 (2 r_3 + r_5) t_1}$	0	$\frac{6 k^2 (2 r_3 + r_5) + t_1}{(1 + 2 k^2)^2 (2 r_3 + r_5) t_1}$

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

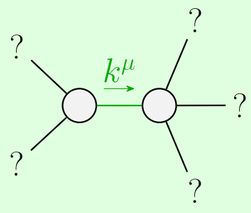
	$\sigma_{2^+}^{\#1}{}_{\alpha\beta}$	$\tau_{2^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{2^-}^{\#1}{}_{\alpha\beta\chi}$
$\sigma_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{2}{(1 + 2 k^2)^2 t_1}$	$-\frac{2 i \sqrt{2}\, k}{(1 + 2 k^2)^2 t_1}$	0
$\tau_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{2 i \sqrt{2}\,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

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

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

Source constraints

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



Quadratic pole

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

Unitarity conditions

$r_5 < -2 r_3 \,\&\&\, t_1 < 0 \,||\, t_1 > 0$

(No massive particles)