Source constraints

SO(3) irreps	#
$\sigma_{0^+}^{\#1} == 0$	1
$\tau_{0^+}^{\#1} == 0$	1
$\tau_{0^+}^{\#2} == 0$	1
$\tau_{1^-}^{\#2\,\alpha} + 2\,i\,k\,\sigma_{1^-}^{\#2\,\alpha} == 0$	3
$\tau_{1^-}^{\#1\,\alpha} == 0$	3
$\tau_{1^+}^{\#1\,\alpha\beta} + i\,k\,\sigma_{1^+}^{\#2\,\alpha\beta} == 0$	3
$\tau_{2^+}^{\#1\,\alpha\beta} - 2\,i\,k\,\sigma_{2^+}^{\#1\,\alpha\beta} == 0$	5
Total #:	17

	$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+}^{\#1}\,\dagger$	0	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	$-t_1$

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

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

	$\omega_{2^+\,\alpha\beta}^{\#1}$	$f_{2^+\,\alpha\beta}^{\#1}$	$\omega_{2^-\,\alpha\beta\chi}^{\#1}$
$\omega_{2^+}^{\#1\,\alpha\beta}\,\dagger$	$\frac{t_1}{2}$	$-\frac{ikt_1}{\sqrt{2}}$	0
$f_{2^+}^{\#1\,\alpha\beta}\,\dagger$	$\frac{ikt_1}{\sqrt{2}}$	$k^2 t_1$	0
$\omega_{2^-}^{\#1\,\alpha\beta\chi}\,\dagger$	0	0	$k^2 r_1 + \frac{t_1}{2}$

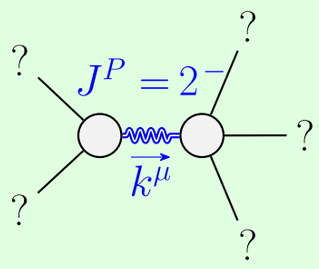
Lagrangian density

$$
\begin{aligned}
&-\tfrac{1}{3} t_1\, \omega_{\prime}{}^{\alpha\prime}\, \omega_{\kappa\alpha}{}^{\kappa} - t_1\, \omega_{\prime}{}^{\kappa\lambda}\, \omega_{\kappa\lambda}{}^{\prime} - r_5\, \partial_{\prime} \omega^{\kappa\lambda}{}_{\kappa}\, \partial^{\prime} \omega_{\lambda\ \alpha}^{\ \alpha} - \tfrac{2}{3} r_1\, \partial^{\beta} \omega^{\theta\alpha}{}_{\kappa}\, \partial_{\theta} \omega_{\alpha\beta}{}^{\kappa} - \\
&\tfrac{2}{3} r_1\, \partial_{\theta} \omega_{\alpha\beta}{}^{\kappa}\, \partial_{\kappa} \omega^{\alpha\beta\theta} + \tfrac{2}{3} r_1\, \partial_{\theta} \omega_{\alpha\beta}{}^{\kappa}\, \partial_{\kappa} \omega^{\theta\alpha\beta} - r_5\, \partial_{\alpha} \omega^{\theta\alpha}{}_{\kappa}\, \partial_{\theta} \omega_{\lambda\ \alpha}^{\ \alpha} + \\
&r_5\, \partial_{\theta} \omega_{\lambda\ \alpha}^{\ \alpha}\, \partial_{\kappa} \omega^{\theta\kappa\lambda} - r_5\, \partial_{\alpha} \omega_{\lambda\ \theta}^{\ \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}{}^{\kappa\prime} + \tfrac{1}{3} t_1\, \omega_{\kappa\lambda}{}^{\lambda}\, \partial^{\kappa} f_{\prime}{}^{\kappa\prime} + \tfrac{2}{3} t_1\, \partial^{\alpha} f_{\kappa\alpha}\, \partial^{\kappa} f_{\prime}{}^{\kappa\prime} - \tfrac{1}{3} t_1\, \partial_{\kappa} f^{\lambda}{}_{\lambda}\, \partial^{\kappa} f_{\prime}{}^{\kappa\prime} + \\
&2\, t_1\, \omega_{\prime\kappa\theta}\, \partial^{\kappa} f^{\prime\theta} - \tfrac{1}{3} t_1\, \omega_{\prime\alpha}{}^{\alpha}\, \partial^{\kappa} f_{\kappa}{}^{\prime} - \tfrac{1}{3} t_1\, \omega_{\prime\lambda}{}^{\lambda}\, \partial^{\kappa} f_{\kappa}{}^{\prime} + \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_{\alpha}{}^{\lambda}\, \partial^{\kappa} f_{\lambda\kappa} + \\
&\tfrac{2}{3} r_1\, \partial_{\kappa} \omega^{\alpha\beta\theta}\, \partial^{\kappa} \omega_{\alpha\beta\theta} - \tfrac{2}{3} r_1\, \partial_{\kappa} \omega^{\theta\alpha\beta}\, \partial^{\kappa} \omega_{\alpha\beta\theta} + \tfrac{2}{3} r_1\, \partial^{\beta} \omega_{\prime}{}^{\alpha\lambda}\, \partial_{\lambda} \omega_{\alpha\beta}{}^{\prime} - \\
&\tfrac{8}{3} r_1\, \partial^{\beta} \omega_{\prime}{}^{\lambda\alpha}\, \partial_{\lambda} \omega_{\alpha\beta}{}^{\prime} + r_5\, \partial_{\alpha} \omega_{\lambda\ \theta}^{\ \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: $f^{\alpha\beta}\, \tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi}$

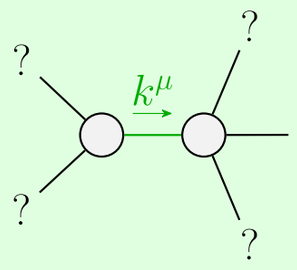
	$\omega_{1^+\,\alpha\beta}^{\#1}$	$\omega_{1^+\,\alpha\beta}^{\#2}$	$f_{1^+\,\alpha\beta}^{\#1}$	$\omega_{1^-\,\alpha}^{\#1}$	$\omega_{1^-\,\alpha}^{\#2}$	$f_{1^-\,\alpha}^{\#1}$	$f_{1^-\,\alpha}^{\#2}$
$\omega_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$k^2\,(2\,r_1 + r_5) - \frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{ikt_1}{\sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2\,\alpha\beta}\,\dagger$	$-\frac{t_1}{\sqrt{2}}$	0	0	0	0	0	0
$f_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$\frac{ikt_1}{\sqrt{2}}$	0	0	0	0	0	0
$\omega_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	$k^2\,(r_1 + r_5) + \frac{t_1}{6}$	$\frac{t_1}{3\sqrt{2}}$	0	$\frac{ikt_1}{3}$
$\omega_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	$\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	0	$\frac{1}{3} i\sqrt{2}\,k t_1$
$f_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	0	0	0	0
$f_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	$-\frac{1}{3} ik t_1$	$-\frac{1}{3} i\sqrt{2}\,k t_1$	0	$\frac{2k^2 t_1}{3}$

	$\sigma_{1^+\,\alpha\beta}^{\#1}$	$\sigma_{1^+\,\alpha\beta}^{\#2}$	$\tau_{1^+\,\alpha\beta}^{\#1}$	$\sigma_{1^-\,\alpha}^{\#1}$	$\sigma_{1^-\,\alpha}^{\#2}$	$\tau_{1^-\,\alpha}^{\#1}$	$\tau_{1^-\,\alpha}^{\#2}$
$\sigma_{1^+}^{\#1\,\alpha\beta}\,\dagger$	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
$\sigma_{1^+}^{\#2\,\alpha\beta}\,\dagger$	$-\frac{\sqrt{2}}{t_1 + k^2 t_1}$	$\frac{-2k^2(2r_1 + r_5) + t_1}{(1+k^2)^2 t_1^2}$	$\frac{i(2k^3(2r_1 + r_5) + kt_1)}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\tau_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$\frac{i\sqrt{2}\,k}{t_1 + k^2 t_1}$	$\frac{i(2k^3(2r_1 + r_5) + kt_1)}{(1+k^2)^2 t_1^2}$	$\frac{-2k^4(2r_1 + r_5) + k^2 t_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\sigma_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	$\frac{1}{k^2(r_1 + r_5)}$	$-\frac{1}{\sqrt{2}\,(k^2 + 2k^4)(r_1 + r_5)}$	$-\frac{i}{\sqrt{2}\,k(1+2k^2)(r_1 + r_5)}$	0
$\sigma_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	$-\frac{1}{\sqrt{2}\,(k^2 + 2k^4)(r_1 + r_5)}$	$\frac{6k^2(r_1 + r_5) + t_1}{2(k + 2k^3)^2(r_1 + r_5) t_1}$	$\frac{i(6k^2(r_1 + r_5) + t_1)}{\sqrt{2}\,k(1+2k^2)^2(r_1 + r_5) t_1}$	0
$\tau_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	$-\frac{i}{\sqrt{2}\,k(1+2k^2)(r_1 + r_5)}$	$\frac{i(6k^2(r_1 + r_5) + t_1)}{\sqrt{2}\,k(1+2k^2)^2(r_1 + r_5) t_1}$	$\frac{6k^2(r_1 + r_5) + t_1}{(1+2k^2)^2(r_1 + r_5) t_1}$	0
$\tau_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	0	0	0	0



Massive particle

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



Quadratic pole

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

Unitarity conditions

$r_1 < 0$ && $r_5 < -r_1$ && $t_1 > 0$