Source constraints

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

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

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

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

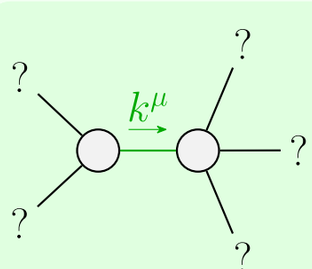
Lagrangian density

$$
\begin{aligned}
&-\tfrac{1}{3}\,t_1\,\omega_{\prime}{}^{\alpha\prime}\,\omega_{\kappa\alpha}{}^{\kappa}\text{-}t_1\,\omega_{\prime}{}^{\kappa\lambda}\,\omega_{\kappa\lambda}{}^{\prime}\text{-}2\,r_3\,\partial_{\prime}\omega^{\kappa\lambda}{}_{\kappa}\,\partial^{\prime}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\text{-}r_5\,\partial_{\prime}\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}\text{-}r_5\,\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}\text{-}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}\text{-}2\,r_3\,\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}\text{-}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}\text{-}\tfrac{1}{2}\,t_1\,\partial^{\alpha}f_{\theta\kappa}\,\partial^{\kappa}f_{\alpha}{}^{\theta}\text{-}\\
&\tfrac{1}{2}\,t_1\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}{}^{\theta}\text{-}\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}\text{-}\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}\text{-}\tfrac{1}{3}\,t_1\,\omega_{\prime\alpha}{}^{\alpha}\,\partial^{\kappa}f_{\prime}{}^{\kappa\prime}\text{-}\\
&\tfrac{1}{3}\,t_1\,\omega_{\prime\lambda}{}^{\lambda}\,\partial^{\kappa}f^{\prime}{}_{\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^{\lambda}{}_{\theta}\,\partial^{\kappa}f_{\lambda}{}^{\theta}+\tfrac{1}{2}\,t_1\,\partial_{\kappa}f^{\lambda}{}_{\theta}\,\partial^{\kappa}f_{\lambda}{}^{\theta}\text{-}\\
&\tfrac{1}{3}\,t_1\,\partial^{\alpha}f^{\lambda}{}_{\alpha}\,\partial^{\kappa}f_{\lambda\kappa}\text{-}4\,r_3\,\partial^{\beta}\omega_{\prime}{}^{\lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime}\text{-}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}\text{-}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	$\frac{1}{k^2\,(2\,r_3+r_5)}$	$-\frac{1}{\sqrt{2}\,(k^2+2\,k^4)\,(2\,r_3+r_5)}$	$-\frac{i}{k\,(1+2\,k^2)\,(2\,r_3+r_5)}$	$-\frac{6\,k^2\,(2\,r_3+r_5)+t_1}{(1+2\,k^2)^2\,(2\,r_3+r_5)\,t_1}$
$\sigma_{1^-}^{\#2\,\dagger\,\alpha}$	0	0	0	$-\frac{1}{\sqrt{2}\,(k^2+2\,k^4)\,(2\,r_3+r_5)}$	$\frac{1}{(k^2+2\,k^4)\,(2\,r_3+r_5)^2}$	$\frac{i\,(6\,k^2\,(2\,r_3+r_5)+t_1)}{\sqrt{2}\,k\,(1+2\,k^2)^2\,(2\,r_3+r_5)^2\,t_1}$	$\frac{6\,k^2\,(2\,r_3+r_5)+t_1}{2\,(k+2\,k^3)^2\,(2\,r_3+r_5)^2\,t_1}$
$\tau_{1^-}^{\#1\,\dagger\,\alpha}$	0	0	0	$\frac{i}{k\,(1+2\,k^2)\,(2\,r_3+r_5)}$	$-\frac{i\,(6\,k^2\,(2\,r_3+r_5)+t_1)}{\sqrt{2}\,k\,(1+2\,k^2)^2\,(2\,r_3+r_5)^2\,t_1}$	0	0
$\tau_{1^-}^{\#2\,\dagger\,\alpha}$	0	0	0	$-\frac{6\,k^2\,(2\,r_3+r_5)+t_1}{(1+2\,k^2)^2\,(2\,r_3+r_5)\,t_1}$	$\frac{6\,k^2\,(2\,r_3+r_5)+t_1}{2\,(k+2\,k^3)^2\,(2\,r_3+r_5)^2\,t_1}$	0	0

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



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)