	$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+}^{\#1}\,\dagger$	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	$k^2\,r_2 - t_1$

	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1}\,\dagger$	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	$\frac{1}{k^2\,r_2 - t_1}$

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

Lagrangian density

$$
\begin{aligned}
&-\frac{1}{3}\,t_1\,\omega_{\prime}{}^{\alpha\prime}{}_{\kappa\alpha}\,\omega_{\prime}{}^{\kappa}{}_{\kappa\alpha} - t_1\,\omega_{\prime}{}^{\kappa\lambda}{}_{\kappa\lambda}\,\omega_{\prime}{}^{\prime}{}_{\kappa\lambda} - r_5\,\partial_{\prime}\omega^{\kappa\lambda}{}_{\kappa}\,\partial^{\prime}\omega_{\lambda}{}^{\alpha}{}_{\alpha} + \frac{2}{3}\,r_2\,\partial^{\beta}\omega^{\theta\alpha}{}_{\kappa}\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa} - \\
&\frac{1}{3}\,r_2\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\,\partial_{\kappa}\omega^{\alpha\beta\theta} - \frac{2}{3}\,r_2\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\,\partial_{\kappa}\omega^{\theta\alpha\beta} - r_5\,\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\,\partial_{\kappa}\omega^{\theta\kappa\lambda} + \\
&r_5\,\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\,\partial_{\kappa}\omega^{\theta\kappa\lambda} - r_5\,\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\,\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^{\lambda}{}_{\kappa}\,\partial^{\kappa}f_{\alpha\lambda} + \\
&\frac{1}{3}\,t_1\,\omega_{\kappa\alpha}{}^{\alpha}\,\partial^{\kappa}f_{\prime}{}^{\prime} + \frac{1}{3}\,t_1\,\omega_{\kappa\lambda}{}^{\lambda}\,\partial^{\kappa}f_{\prime}{}^{\prime} + \frac{2}{3}\,t_1\,\partial^{\alpha}f_{\kappa\alpha}\,\partial^{\kappa}f_{\prime}{}^{\prime} - \frac{1}{3}\,t_1\,\partial_{\kappa}f^{\lambda}{}_{\lambda}\,\partial^{\kappa}f_{\prime}{}^{\prime} + \\
&2\,t_1\,\omega_{\prime\kappa\theta}\,\partial^{\kappa}f^{\prime\theta} - \frac{1}{3}\,t_1\,\omega_{\prime\alpha}{}^{\alpha}\,\partial^{\kappa}f^{\prime}{}_{\kappa} - \frac{1}{3}\,t_1\,\omega_{\prime\lambda}{}^{\lambda}\,\partial^{\kappa}f^{\prime}{}_{\kappa} + \frac{1}{2}\,t_1\,\partial^{\alpha}f^{\lambda}{}_{\kappa}\,\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^{\lambda}{}_{\theta}\,\partial^{\kappa}f_{\lambda}{}^{\theta} - \frac{1}{3}\,t_1\,\partial^{\alpha}f^{\lambda}{}_{\alpha}\,\partial^{\kappa}f_{\lambda\kappa} + \\
&\frac{1}{3}\,r_2\,\partial_{\kappa}\omega^{\alpha\beta\theta}\,\partial^{\kappa}\omega_{\alpha\beta\theta} + \frac{2}{3}\,r_2\,\partial_{\kappa}\omega^{\theta\alpha\beta}\,\partial^{\kappa}\omega_{\alpha\beta\theta} - \frac{2}{3}\,r_2\,\partial^{\beta}\omega_{\prime}{}^{\alpha\lambda}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} + \\
&\frac{2}{3}\,r_2\,\partial^{\beta}\omega_{\prime}{}^{\lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} + r_5\,\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\,\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: $f^{\alpha\beta}\,\tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}$

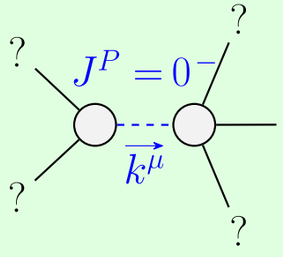
	$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}_{\alpha\beta}\,\dagger$	0	$-\frac{\sqrt{2}}{t_1+k^2\,t_1}$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

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

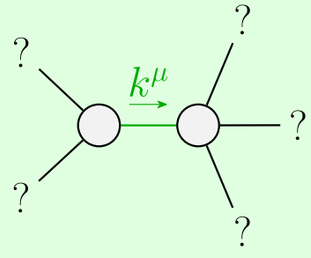
	$\omega_{2^+}^{\#1}{}_{\alpha\beta}$	$f_{2^+}^{\#1}{}_{\alpha\beta}$	$\omega_{2^-}^{\#1}{}_{\alpha\beta\chi}$
$\omega_{2^+}^{\#1}\,\dagger^{\alpha\beta}$	$\frac{t_1}{2}$	$-\frac{i\,k\,t_1}{\sqrt{2}}$	0
$f_{2^+}^{\#1}\,\dagger^{\alpha\beta}$	$\frac{i\,k\,t_1}{\sqrt{2}}$	$k^2\,t_1$	0
$\omega_{2^-}^{\#1}\,\dagger^{\alpha\beta\chi}$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

Source constraints

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



Massive particle	
Pole residue:	$-\frac{1}{r_2} > 0$
Polarisations:	1
Square mass:	$\frac{t_1}{r_2} > 0$
Spin:	0
Parity:	Odd



Quadratic pole	
Pole residue:	$-\frac{1}{r_5\,{t_1}^2} > 0$
Polarisations:	2

Unitarity conditions

$r_2 < 0$ && $r_5 < 0$ && $t_1 < 0$