$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}\dagger^{\alpha\beta}$	$-\frac{\sqrt{2}}{t_1+k^2 t_1}$	$-\frac{i\sqrt{2}\,k}{t_1+k^2 t_1}$	0	0	0	0
$\sigma_{1^+}^{\#2}\dagger^{\alpha\beta}$	$\frac{-2k^2 r_5+t_1}{(1+k^2)^2 {t_1}^2}$	$-\frac{i(2k^3 r_5-k t_1)}{(1+k^2)^2 {t_1}^2}$	0	0	0	0
$\tau_{1^+}^{\#1}\dagger^{\alpha\beta}$	$\frac{i(2k^3 r_5-k t_1)}{(1+k^2)^2 {t_1}^2}$	$\frac{-2k^4 r_5+k^2 t_1}{(1+k^2)^2 {t_1}^2}$	0	0	0	0
$\sigma_{1^-}^{\#1}\dagger^{\alpha}$	0	0	$\frac{2(t_1+t_3)}{3t_1 t_3+2k^2 r_5(t_1+t_3)}$	$-\frac{\sqrt{2}(t_1-2t_3)}{(1+2k^2)(3t_1 t_3+2k^2 r_5(t_1+t_3))}$	0	$-\frac{2ik(t_1-2t_3)}{(1+2k^2)(3t_1 t_3+2k^2 r_5(t_1+t_3))}$
$\sigma_{1^-}^{\#2}\dagger^{\alpha}$	0	0	$-\frac{\sqrt{2}(t_1-2t_3)}{(1+2k^2)(3t_1 t_3+2k^2 r_5(t_1+t_3))}$	$\frac{6k^2 r_5+t_1+4t_3}{(1+2k^2)^2(3t_1 t_3+2k^2 r_5(t_1+t_3))}$	0	$\frac{i\sqrt{2}\,k(6k^2 r_5+t_1+4t_3)}{(1+2k^2)^2(3t_1 t_3+2k^2 r_5(t_1+t_3))}$
$\tau_{1^-}^{\#1}\dagger^{\alpha}$	0	0	0	0	0	0
$\tau_{1^-}^{\#2}\dagger^{\alpha}$	0	0	$\frac{2ik(t_1-2t_3)}{(1+2k^2)(3t_1 t_3+2k^2 r_5(t_1+t_3))}$	$-\frac{i\sqrt{2}\,k(6k^2 r_5+t_1+4t_3)}{(1+2k^2)^2(3t_1 t_3+2k^2 r_5(t_1+t_3))}$	0	$\frac{2k^2(6k^2 r_5+t_1+4t_3)}{(1+2k^2)^2(3t_1 t_3+2k^2 r_5(t_1+t_3))}$

$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$\omega_{1^+}^{\#1}\dagger^{\alpha\beta}$	$k^2 r_5-\frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{ikt_1}{\sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2}\dagger^{\alpha\beta}$	$-\frac{t_1}{\sqrt{2}}$	0	0	0	0	0	0
$f_{1^+}^{\#1}\dagger^{\alpha\beta}$	$\frac{ikt_1}{\sqrt{2}}$	0	0	0	0	0	0
$\omega_{1^-}^{\#1}\dagger^{\alpha}$	0	0	0	$\frac{1}{6}(6k^2 r_5+t_1+4t_3)$	$\frac{t_1-2t_3}{3\sqrt{2}}$	0	$\frac{1}{3}ik(t_1-2t_3)$
$\omega_{1^-}^{\#2}\dagger^{\alpha}$	0	0	0	$\frac{t_1-2t_3}{3\sqrt{2}}$	$\frac{t_1+t_3}{3}$	0	$\frac{1}{3}i\sqrt{2}\,k(t_1+t_3)$
$f_{1^-}^{\#1}\dagger^{\alpha}$	0	0	0	0	0	0	0
$f_{1^-}^{\#2}\dagger^{\alpha}$	0	0	0	$-\frac{1}{3}ik(t_1-2t_3)$	$-\frac{1}{3}i\sqrt{2}\,k(t_1+t_3)$	0	$\frac{2}{3}k^2(t_1+t_3)$

$\sigma_{0^+}^{\#1}\dagger$	$\tau_{0^+}^{\#1}\dagger$	$\tau_{0^+}^{\#2}\dagger$	$\sigma_{0^-}^{\#1}\dagger$
$\sigma_{0^+}^{\#1}$	$\frac{1}{(1+2k^2)^2 t_3}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	0
$\tau_{0^+}^{\#1}$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	$\frac{2k^2}{(1+2k^2)^2 t_3}$	0
$\tau_{0^+}^{\#2}$	0	0	0
$\sigma_{0^-}^{\#1}$	0	0	$-\frac{1}{t_1}$

Source constraints

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

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

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

$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+}^{\#1}\dagger$	t_3	$-i\sqrt{2}\,k t_3$	0	0
$f_{0^+}^{\#1}\dagger$	$i\sqrt{2}\,k t_3$	$2k^2 t_3$	0	0
$f_{0^+}^{\#2}\dagger$	0	0	0	0
$\omega_{0^-}^{\#1}\dagger$	0	0	0	$-t_1$

Lagrangian density

$$
\begin{aligned}
&-\tfrac{1}{3}t_1\,\omega_{\iota}{}^{\alpha\iota}\,\omega_{\kappa\alpha}{}^{\kappa}+\tfrac{2}{3}t_3\,\omega_{\iota}{}^{\alpha\iota}\,\omega_{\kappa\alpha}{}^{\kappa}-t_1\,\omega_{\iota}{}^{\kappa\lambda}\,\omega_{\kappa\lambda}{}^{\iota}+f^{\alpha\beta}\,\tau_{\alpha\beta}+\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}-\\
&r_5\,\partial_{\iota}\omega^{\kappa\lambda}{}_{\kappa}\partial^{\iota}\omega_{\lambda}{}^{\alpha}{}_{\alpha}-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}+\\
&2r_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'_{\iota}-\tfrac{2}{3}t_3\,\omega_{\kappa\alpha}{}^{\alpha}\,\partial^{\kappa}f'_{\iota}+\tfrac{1}{3}t_1\,\omega_{\kappa\lambda}{}^{\lambda}\,\partial^{\kappa}f'_{\iota}-\tfrac{2}{3}t_3\,\omega_{\kappa\lambda}{}^{\lambda}\,\partial^{\kappa}f'_{\iota}+\\
&\tfrac{2}{3}t_1\,\partial^{\alpha}f_{\kappa\alpha}\partial^{\kappa}f'_{\iota}-\tfrac{4}{3}t_3\,\partial^{\alpha}f_{\kappa\alpha}\partial^{\kappa}f'_{\iota}-\tfrac{1}{3}t_1\,\partial_{\kappa}f^{\lambda}{}_{\lambda}\partial^{\kappa}f'_{\iota}+\tfrac{2}{3}t_3\,\partial_{\kappa}f^{\lambda}{}_{\lambda}\partial^{\kappa}f'_{\iota}+\\
&2t_1\,\omega_{\iota\kappa\theta}\,\partial^{\kappa}f'^{\theta}-\tfrac{1}{3}t_1\,\omega_{\iota\alpha}{}^{\alpha}\,\partial^{\kappa}f'_{\kappa}+\tfrac{2}{3}t_3\,\omega_{\iota\alpha}{}^{\alpha}\,\partial^{\kappa}f'_{\kappa}-\tfrac{1}{3}t_1\,\omega_{\iota\lambda}{}^{\lambda}\,\partial^{\kappa}f'_{\kappa}+\\
&\tfrac{2}{3}t_3\,\omega_{\iota\lambda}{}^{\lambda}\,\partial^{\kappa}f'_{\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}+\tfrac{2}{3}t_3\,\partial^{\alpha}f^{\lambda}{}_{\alpha}\partial^{\kappa}f_{\lambda\kappa}+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}
$$

Massive particle

Pole residue:	$\frac{6t_1 t_3(t_1+t_3)-3r_5(t_1{}^2+2t_3{}^2)}{2r_5(t_1+t_3)(-3t_1 t_3+r_5(t_1+t_3))} > 0$
Polarisations:	3
Square mass:	$-\frac{3t_1 t_3}{2r_5 t_1+2r_5 t_3} > 0$
Spin:	1
Parity:	Odd

Unitarity conditions

$r_5 < 0 \;\&\&\; (t_1 < 0 \;\&\&\; 0 < t_3 < -t_1) \,||\, (t_1 > 0 \;\&\&\; (t_3 < -t_1 \,||\, t_3 > 0))$

(No massless particles)