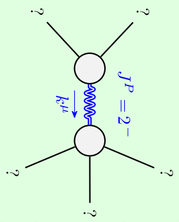

Massive particle	
Pole residue:	$-\frac{1}{r_1} > 0$
Polarisations:	5
Square mass:	$-\frac{t_1}{2r_1} > 0$
Spin:	2
Parity:	Odd

Unitarity conditions

$r_1 < 0 \;\&\&\; t_1 > 0$

(No massless particles)

Lagrangian density

$$-\frac{1}{3} t_1\, \omega_{\iota}^{\alpha\iota}\, \omega_{\kappa\alpha}{}^{\kappa} + \frac{2}{3} t_3\, \omega_{\iota}^{\alpha\iota}\, \omega_{\kappa\alpha}{}^{\kappa} - t_1\, \omega_{\iota}^{\kappa\lambda}\, \omega_{\kappa\lambda}{}' + r_1\, \partial_{\iota}\omega^{\kappa\lambda}{}_{\kappa}\partial'\omega_{\lambda}{}^{\alpha}{}_{\alpha} -$$
$$\frac{2}{3} r_1\, \partial^{\beta}\omega^{\theta\alpha}{}_{\kappa}\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa} - \frac{2}{3} r_1\, \partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\partial_{\kappa}\omega^{\alpha\beta\theta} + \frac{2}{3} r_1\, \partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\partial_{\kappa}\omega^{\theta\alpha\beta} +$$
$$r_1\, \partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\theta\kappa\lambda} - r_1\, \partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\theta\kappa\lambda} + r_1\, \partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\kappa\lambda\theta} -$$
$$2 r_1\, \partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta} - \frac{1}{2} t_1\, \partial^{\alpha}f_{\theta\kappa}\partial^{\kappa}f_{\alpha}{}^{\theta} - \frac{1}{2} t_1\, \partial^{\alpha}f_{\kappa\theta}\partial^{\kappa}f_{\alpha}{}^{\theta} -$$
$$\frac{1}{2} t_1\, \partial^{\alpha}f^{\lambda}{}_{\kappa}\partial^{\kappa}f_{\alpha\lambda} + \frac{1}{3} t_1\, \omega_{\kappa\alpha}{}^{\alpha}\partial^{\kappa}f'_{\iota} - \frac{2}{3} t_3\, \omega_{\kappa\alpha}{}^{\alpha}\partial^{\kappa}f'_{\iota} + \frac{1}{3} t_1\, \omega_{\kappa\lambda}{}^{\lambda}\partial^{\kappa}f'_{\iota} -$$
$$\frac{2}{3} t_3\, \omega_{\kappa\lambda}{}^{\lambda}\partial^{\kappa}f'_{\iota} + \frac{2}{3} t_1\, \partial^{\alpha}f_{\kappa\alpha}\partial^{\kappa}f'_{\iota} - \frac{4}{3} t_3\, \partial^{\alpha}f_{\kappa\alpha}\partial^{\kappa}f'_{\iota} - \frac{1}{3} t_1\, \partial_{\kappa}f^{\lambda}{}_{\lambda}\partial^{\kappa}f'_{\iota} +$$
$$\frac{2}{3} t_3\, \partial_{\kappa}f^{\lambda}{}_{\lambda}\partial^{\kappa}f'_{\iota} + 2 t_1\, \omega_{\iota\kappa\theta}\partial^{\kappa}f'^{\theta} - \frac{1}{3} t_1\, \omega_{\iota\alpha}{}^{\alpha}\partial^{\kappa}f'_{\kappa} + \frac{2}{3} t_3\, \omega_{\iota\alpha}{}^{\alpha}\partial^{\kappa}f'_{\kappa} -$$
$$\frac{1}{3} t_1\, \omega_{\iota\lambda}{}^{\lambda}\partial^{\kappa}f'_{\kappa} + \frac{2}{3} t_3\, \omega_{\iota\lambda}{}^{\lambda}\partial^{\kappa}f'_{\kappa} + \frac{1}{2} t_1\, \partial^{\alpha}f^{\lambda}{}_{\kappa}\partial^{\kappa}f_{\lambda\alpha} + \frac{1}{2} t_1\, \partial_{\kappa}f_{\theta}{}^{\lambda}\partial^{\kappa}f_{\lambda}{}^{\theta} +$$
$$\frac{1}{2} t_1\, \partial_{\kappa}f^{\lambda}{}_{\theta}\partial^{\kappa}f_{\lambda}{}^{\theta} - \frac{1}{3} t_1\, \partial^{\alpha}f^{\lambda}{}_{\alpha}\partial^{\kappa}f_{\lambda\kappa} + \frac{2}{3} t_3\, \partial^{\alpha}f^{\lambda}{}_{\alpha}\partial^{\kappa}f_{\lambda\kappa} +$$
$$\frac{2}{3} r_1\, \partial_{\kappa}\omega^{\alpha\beta\theta}\partial^{\kappa}\omega_{\alpha\beta\theta} - \frac{2}{3} r_1\, \partial_{\kappa}\omega^{\theta\alpha\beta}\partial^{\kappa}\omega_{\alpha\beta\theta} + \frac{2}{3} r_1\, \partial^{\beta}\omega_{\iota}^{\alpha\lambda}\partial_{\lambda}\omega_{\alpha\beta}{}' -$$
$$\frac{8}{3} r_1\, \partial^{\beta}\omega_{\iota}^{\lambda\alpha}\partial_{\lambda}\omega_{\alpha\beta}{}' - r_1\, \partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa} + r_1\, \partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}$$

Added source term: $f^{\alpha\beta}\, \tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi}$

	$\sigma^{\#1}_{1^+\alpha\beta}$	$\sigma^{\#2}_{1^+\alpha\beta}$	$\tau^{\#1}_{1^+\alpha\beta}$	$\sigma^{\#1}_{1^-\alpha}$	$\sigma^{\#2}_{1^-\alpha}$	$\tau^{\#1}_{1^-\alpha}$	$\tau^{\#2}_{1^-\alpha}$
$\sigma^{\#1}_{1^+}{}^{\dagger\alpha\beta}$	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
$\sigma^{\#2}_{1^+}{}^{\dagger\alpha\beta}$	$-\frac{\sqrt{2}}{t_1+k^2 t_1}$	$\frac{-2k^2 r_1+t_1}{(1+k^2)^2 t_1{}^2}$	$-\frac{i(2k^3 r_1-k t_1)}{(1+k^2)^2 t_1{}^2}$	0	0	0	0
$\tau^{\#1}_{1^+}{}^{\dagger\alpha\beta}$	$\frac{i\sqrt{2}\,k}{t_1+k^2 t_1}$	$\frac{i(2k^3 r_1-k t_1)}{(1+k^2)^2 t_1{}^2}$	$\frac{-2k^4 r_1+k^2 t_1}{(1+k^2)^2 t_1{}^2}$	0	0	0	0
$\sigma^{\#1}_{1^-}{}^{\dagger\alpha}$	0	0	0	$\frac{2(t_1+t_3)}{3 t_1 t_3}$	$-\frac{\sqrt{2}\,(t_1-2t_3)}{3(1+2k^2) t_1 t_3}$	0	$-\frac{2ikt_1-4ikt_3}{3t_1 t_3+6k^2 t_1 t_3}$
$\sigma^{\#2}_{1^-}{}^{\dagger\alpha}$	0	0	0	$-\frac{\sqrt{2}\,(t_1-2t_3)}{3(1+2k^2) t_1 t_3}$	$\frac{t_1+4t_3}{3(1+2k^2)^2 t_1 t_3}$	0	$\frac{i\sqrt{2}\,k(t_1+4t_3)}{3(1+2k^2)^2 t_1 t_3}$
$\tau^{\#1}_{1^-}{}^{\dagger\alpha}$	0	0	0	0	0	0	0
$\tau^{\#2}_{1^-}{}^{\dagger\alpha}$	0	0	0	$\frac{2ik(t_1-2t_3)}{3t_1 t_3+6k^2 t_1 t_3}$	$-\frac{i\sqrt{2}\,k(t_1+4t_3)}{3(1+2k^2)^2 t_1 t_3}$	0	$\frac{2k^2(t_1+4t_3)}{3(1+2k^2)^2 t_1 t_3}$

	$\omega^{\#1}_{1^+\alpha\beta}$	$\omega^{\#2}_{1^+\alpha\beta}$	$f^{\#1}_{1^+\alpha\beta}$	$\omega^{\#1}_{1^-\alpha}$	$\omega^{\#2}_{1^-\alpha}$	$f^{\#1}_{1^-\alpha}$	$f^{\#2}_{1^-\alpha}$
$\omega^{\#1}_{1^+}{}^{\dagger\alpha\beta}$	$k^2 r_1 - \frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{ikt_1}{\sqrt{2}}$	0	0	0	0
$\omega^{\#2}_{1^+}{}^{\dagger\alpha\beta}$	$-\frac{t_1}{\sqrt{2}}$	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	$\frac{1}{6}(t_1+4t_3)$	$\frac{t_1-2t_3}{3\sqrt{2}}$	0	$\frac{1}{3} i k (t_1-2t_3)$
$\omega^{\#2}_{1^-}{}^{\dagger\alpha}$	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
$f^{\#2}_{1^-}{}^{\dagger\alpha}$	0	0	0	$-\frac{1}{3} i k (t_1-2t_3)$	$-\frac{1}{3} i \sqrt{2}\, k (t_1+t_3)$	0	$\frac{2}{3} k^2 (t_1+t_3)$

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

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

	$\omega^{\#1}_{0^+}{}^{\dagger}$	$f^{\#2}_{0^+}{}^{\dagger}$	$f^{\#1}_{0^+}{}^{\dagger}$	$\omega^{\#1}_{0^+}{}^{\dagger}$
$\omega^{\#1}_{0^+}$	t_3	0	$i\sqrt{2}\,k t_3$	0
$f^{\#1}_{0^+}$	$-i\sqrt{2}\,k t_3$	0	$2k^2 t_3$	0
$f^{\#2}_{0^+}$	0	0	0	0
$\omega^{\#1}_{0^-}$	0	0	0	$-t_1$

	$\omega^{\#1}_{2^+\alpha\beta}$	$f^{\#1}_{2^+\alpha\beta}$	$\omega^{\#1}_{2^-\alpha\beta\chi}$
$\omega^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$\frac{t_1}{2}$	$-\frac{ikt_1}{\sqrt{2}}$	0
$f^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$\frac{ikt_1}{\sqrt{2}}$	$k^2 t_1$	0
$\omega^{\#1}_{2^-}{}^{\dagger\alpha\beta\chi}$	0	0	$k^2 r_1 + \frac{t_1}{2}$

Source constraints

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