

	$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}_{\dagger}{}^{\alpha\beta}$	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
$\sigma_{1^+}^{\#2}{}_{\dagger}{}^{\alpha\beta}$	$-\frac{\sqrt{2}}{t_1+k^2 t_1}$	$\frac{-2k^2(2r_3+r_5)+t_1}{(1+k^2)^2 t_1^2}$	$\frac{-2ik^3(2r_3+r_5)+ikt_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\tau_{1^+}^{\#1}{}_{\dagger}{}^{\alpha\beta}$	$\frac{i\sqrt{2}k}{t_1+k^2 t_1}$	$\frac{i(2k^3(2r_3+r_5)-kt_1)}{(1+k^2)^2 t_1^2}$	$\frac{-2k^4(2r_3+r_5)+k^2 t_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\sigma_{1^-}^{\#1}{}_{\dagger}{}^{\alpha}$	0	0	0	$\frac{1}{k^2(-r_1+2r_3+r_5)}$	$\frac{1}{\sqrt{2}(k^2+2k^4)(r_1-2r_3-r_5)}$	0	$\frac{i}{k(1+2k^2)(r_1-2r_3-r_5)}$
$\sigma_{1^-}^{\#2}{}_{\dagger}{}^{\alpha}$	0	0	0	$\frac{1}{\sqrt{2}(k^2+2k^4)(r_1-2r_3-r_5)}$	$\frac{1}{\frac{-r_1+2r_3+r_5}{2(k+2k^3)^2}+t_1}$	0	$\frac{i(6k^2(r_1-2r_3-r_5)-t_1)}{\sqrt{2}k(1+2k^2)^2(r_1-2r_3-r_5)t_1}$
$\tau_{1^-}^{\#1}{}_{\dagger}{}^{\alpha}$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}_{\dagger}{}^{\alpha}$	0	0	0	$\frac{i}{k(1+2k^2)(-r_1+2r_3+r_5)}$	$-\frac{i(6k^2(r_1-2r_3-r_5)-t_1)}{\sqrt{2}k(1+2k^2)^2(r_1-2r_3-r_5)t_1}$	0	$\frac{1}{\frac{-r_1+2r_3+r_5}{(1+2k^2)^2}+t_1}$

	$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$\omega_{1^+}^{\#1}{}_{\dagger}{}^{\alpha\beta}$	$k^2(2r_3+r_5)-\frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{ikt_1}{\sqrt{2}}$	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	$k^2(-r_1+2r_3+r_5)+\frac{t_1}{6}$	$\frac{t_1}{3\sqrt{2}}$	0	$\frac{ikt_1}{3}$
$\omega_{1^-}^{\#2}{}_{\dagger}{}^{\alpha}$	0	0	0	$\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	0	$\frac{1}{3}i\sqrt{2}kt_1$
$f_{1^-}^{\#1}{}_{\dagger}{}^{\alpha}$	0	0	0	0	0	0	0
$f_{1^-}^{\#2}{}_{\dagger}{}^{\alpha}$	0	0	0	$-\frac{1}{3}ikt_1$	$-\frac{1}{3}i\sqrt{2}kt_1$	0	$\frac{2k^2 t_1}{3}$

Source constraints	
SO(3) irreps	#
$\tau_{0^+}^{\#2} == 0$	1
$\tau_{0^+}^{\#1} == 0$	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

Lagrangian density	
$-\frac{1}{3}t_1\omega_{\phantom{\dagger}'}^{\alpha\phantom{\dagger}'}\omega_{\kappa\alpha}^{\phantom{\dagger}'}{}^{\kappa}-t_1\omega_{\phantom{\dagger}'}^{\kappa\lambda}\omega_{\kappa\lambda}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+2r_1\partial_i\omega^{\kappa\lambda}{}_{\kappa}\partial^i\omega_{\lambda}{}^{\alpha}{}_{\alpha}-2r_3\partial_i\omega^{\kappa\lambda}{}_{\kappa}\partial^i\omega_{\lambda}{}^{\alpha}{}_{\alpha}-$ $r_5\partial_i\omega^{\kappa\lambda}{}_{\kappa}\partial^i\omega_{\lambda}{}^{\alpha}{}_{\alpha}-\frac{2}{3}r_1\partial^{\beta}\omega^{\theta\alpha}{}_{\kappa}\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}-\frac{2}{3}r_1\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\partial_{\kappa}\omega^{\alpha\beta\theta}+$ $\frac{2}{3}r_1\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\partial_{\kappa}\omega^{\theta\alpha\beta}-2r_1\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\theta\kappa\lambda}+2r_3\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\theta\kappa\lambda}-$ $r_5\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\theta\kappa\lambda}+2r_1\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\theta\kappa\lambda}-2r_3\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\theta\kappa\lambda}+$ $r_5\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\theta\kappa\lambda}+2r_1\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\kappa\lambda\theta}-2r_3\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\kappa\lambda\theta}-$ $r_5\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial_{\kappa}\omega^{\kappa\lambda\theta}-4r_1\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta}+4r_3\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta}+$ $2r_5\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta}-\frac{1}{2}t_1\partial^{\alpha}f_{\theta\kappa}\partial^{\kappa}f_{\alpha}{}^{\theta}-\frac{1}{2}t_1\partial^{\alpha}f_{\kappa\theta}\partial^{\kappa}f_{\alpha}{}^{\theta}-$ $\frac{1}{2}t_1\partial^{\alpha}f^{\lambda}{}_{\kappa}\partial^{\kappa}f_{\alpha\lambda}+\frac{1}{3}t_1\omega_{\kappa\alpha}{}^{\alpha}\partial^{\kappa}f'_{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+\frac{1}{3}t_1\omega_{\kappa\lambda}{}^{\lambda}\partial^{\kappa}f'_{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+\frac{2}{3}t_1\partial^{\alpha}f_{\kappa\alpha}\partial^{\kappa}f'_{\phantom{\dagger}'}{}^{\phantom{\dagger}'}-$ $\frac{1}{3}t_1\partial_{\kappa}f^{\lambda}{}_{\lambda}\partial^{\kappa}f'_{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+2t_1\omega_{i\kappa\theta}\partial^{\kappa}f'^{\theta}-\frac{1}{3}t_1\omega_{i\alpha}{}^{\alpha}\partial^{\kappa}f'_{\kappa}{}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}-\frac{1}{3}t_1\omega_{i\lambda}{}^{\lambda}\partial^{\kappa}f'_{\kappa}{}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+$ $\frac{1}{2}t_1\partial^{\alpha}f^{\lambda}{}_{\kappa}\partial^{\kappa}f_{\lambda\alpha}+\frac{1}{2}t_1\partial_{\kappa}f_{\theta}{}^{\lambda}\partial^{\kappa}f_{\lambda}{}^{\theta}+\frac{1}{2}t_1\partial_{\kappa}f^{\lambda}{}_{\theta}\partial^{\kappa}f_{\lambda}{}^{\theta}-$ $\frac{1}{3}t_1\partial^{\alpha}f^{\lambda}{}_{\alpha}\partial^{\kappa}f_{\lambda\kappa}+\frac{2}{3}r_1\partial_{\kappa}\omega^{\alpha\beta\theta}\partial^{\kappa}\omega_{\alpha\beta\theta}-\frac{2}{3}r_1\partial_{\kappa}\omega^{\theta\alpha\beta}\partial^{\kappa}\omega_{\alpha\beta\theta}+$ $\frac{2}{3}r_1\partial^{\beta}\omega_{\phantom{\dagger}'}^{\alpha\lambda}\partial_{\lambda}\omega_{\alpha\beta}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+\frac{4}{3}r_1\partial^{\beta}\omega_{\phantom{\dagger}'}^{\lambda\alpha}\partial_{\lambda}\omega_{\alpha\beta}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}-4r_3\partial^{\beta}\omega_{\phantom{\dagger}'}^{\lambda\alpha}\partial_{\lambda}\omega_{\alpha\beta}^{\phantom{\dagger}'}{}^{\phantom{\dagger}'}+$ $2r_1\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}-2r_3\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}+r_5\partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}-$ $2r_1\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}+2r_3\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}-r_5\partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}$	
Added source term: $\left f^{\alpha\beta}\tau_{\alpha\beta}+\omega^{\alpha\beta\chi}\sigma_{\alpha\beta\chi}\right.$	

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

	$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+}^{\#1}{}_{\dagger}$	$6k^2(-r_1+r_3)$	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	$-t_1$

	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1}{}_{\dagger}$	$\frac{1}{6k^2(-r_1+r_3)}$	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	$-\frac{1}{t_1}$

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

Massive particle

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

Quadratic pole

Pole residue:	$\frac{1}{(r_1-2r_3-r_5)t_1^2} > 0$
Polarisations:	2

Unitarity conditions

$r_1 < 0$  &&  $r_5 < r_1-2r_3$  &&  $t_1 > 0$