

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

Unitarity conditions

$r_2 < 0 \ \&\& \ t_1 < 0$

(No massless particles)

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

Lagrangian density

$$-t_1\omega_{}^{\alpha}\omega_{}^{\kappa}t_1\omega_{}^{\kappa\lambda}\omega_{}^{}^{}+\frac{2}{3}r_2\partial^\beta\omega_{}^{\theta\alpha}\partial_\theta\omega_{}^{\kappa}-$$

$$\frac{1}{3}r_2\partial_\theta\omega_{}^{\kappa}\partial_\kappa\omega_{}^{\alpha\beta\theta}-\frac{2}{3}r_2\partial_\theta\omega_{}^{\kappa}\partial_\kappa\omega_{}^{\theta\alpha\beta}-\frac{1}{2}t_1\partial^\alpha f_{}^{\theta}\partial_\theta^\alpha f_{}^{\theta}-$$

$$\frac{1}{2}t_1\partial^\alpha f_{}^{\kappa\theta}\partial_\theta^\kappa f_{}^{\theta}-\frac{1}{2}t_1\partial_1\partial^\alpha f_{}^{\lambda}\partial_\kappa^\kappa f_{}^{\alpha\lambda}+t_1\omega_{}^{\alpha}\partial_\kappa^\kappa f_{}^{}^{}+t_1\omega_{}^{\lambda}\partial_\kappa^\kappa f_{}^{}^{}+$$

$$2t_1\partial^\alpha f_{}^{\kappa\alpha}\partial_\alpha^\kappa f_{}^{}^{}-t_1\partial_\kappa f_{}^{\lambda}\partial_\lambda^\kappa f_{}^{}^{}+2t_1\omega_{}^{}^{}\partial^\kappa f_{}^{\theta}-t_1\omega_{}^{\alpha}\partial_\alpha^\kappa f_{}^{}^{}-$$

$$t_1\omega_{}^{\lambda}\partial_\alpha^\kappa f_{}^{}^{}+\frac{1}{2}t_1\partial^\alpha f_{}^{\lambda}\partial_\kappa^\kappa f_{}^{\theta}+\frac{1}{2}t_1\partial_\kappa f_{}^{\lambda}\partial_\theta^\kappa f_{}^{\theta}-t_1\partial_1\partial^\alpha f_{}^{\lambda}\partial_\kappa^\kappa f_{}^{\theta}+\frac{1}{2}r_2\partial_\kappa\omega_{}^{\theta\alpha\beta}\partial_\alpha^\kappa\omega_{}^{\alpha\beta\theta}-\frac{2}{3}r_2\partial^\beta\omega_{}^{\alpha\lambda}\partial_\lambda^\alpha\omega_{}^{\beta}+\frac{2}{3}r_2\partial^\beta\omega_{}^{\lambda\alpha}\partial_\lambda^\alpha\omega_{}^{\alpha\beta}$$

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

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

$\sigma_{0+}^{\#1} \dagger$	$\tau_{0+}^{\#1} \dagger$	$\tau_{0+}^{\#2} \dagger$	$\sigma_{0+}^{\#1} \dagger$
$\sigma_{0+}^{\#1} \dagger$	$-\frac{1}{(1+2k^2)^2}t_1$	$\frac{i\sqrt{2}k}{(1+2k^2)^2}t_1$	0
$\tau_{0+}^{\#1} \dagger$	$-\frac{i\sqrt{2}k}{(1+2k^2)^2}t_1$	$-\frac{2k^2}{(1+2k^2)^2}t_1$	0
$\tau_{0+}^{\#2} \dagger$	0	0	0
$\sigma_{0+}^{\#1} \dagger$	0	0	$\frac{1}{k^2r_2-t_1}$

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

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

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

	$\omega_{0+}^{\#1}$	$f_{0+}^{\#1}$	$f_{0+}^{\#2}$	$\omega_{0+}^{\#1}$
$\omega_{0+}^{\#1} \dagger$	$-t_1$	$i\sqrt{2}kt_1$	0	0
$f_{0+}^{\#1} \dagger$	$-i\sqrt{2}kt_1$	$-2k^2t_1$	0	0
$f_{0+}^{\#2} \dagger$	0	0	0	0
$\omega_{0+}^{\#1} \dagger$	0	0	0	$k^2r_2-t_1$