



Massive particle	
Pole residue:	$-\frac{1}{r_2} > 0$
Polarisations:	1
Square mass:	$-\frac{t_2}{r_2} > 0$
Spin:	0
Parity:	Odd

$r_2 < 0 \&\& t_2 > 0$

Unitarity conditions

(No massless particles)

$\omega_{1+}^{\#1} \dagger^{\alpha\beta}$	$\omega_{1+}^{\#2} \dagger^{\alpha\beta}$	$f_{1+}^{\#1} \dagger^{\alpha\beta}$	$\omega_{1-}^{\#1} \dagger^{\alpha\beta}$	$\omega_{1-}^{\#2} \dagger^{\alpha\beta}$	$f_{1-}^{\#1} \dagger^{\alpha\beta}$	$f_{1-}^{\#2} \dagger^{\alpha\beta}$
$\omega_{1+}^{\#1} \dagger^{\alpha\beta}$	$\frac{2t_2}{3}$	$\frac{\sqrt{2}t_2}{3}$	$\frac{1}{3}i\sqrt{2}kt_2$	0	0	0
$\omega_{1+}^{\#2} \dagger^{\alpha\beta}$	$\frac{\sqrt{2}t_2}{3}$	$\frac{t_2}{3}$	$\frac{ikt_2}{3}$	0	0	0
$f_{1+}^{\#1} \dagger^{\alpha\beta}$	$-\frac{1}{3}i\sqrt{2}kt_2$	$-\frac{1}{3}i\sqrt{2}kt_2$	$\frac{k^2t_2}{3}$	0	0	0
$\omega_{1-}^{\#1} \dagger^{\alpha}$	0	0	0	0	0	0
$\omega_{1-}^{\#2} \dagger^{\alpha}$	0	0	0	0	0	0
$f_{1-}^{\#1} \dagger^{\alpha}$	0	0	0	0	0	0
$f_{1-}^{\#2} \dagger^{\alpha}$	0	0	0	0	0	0

$\sigma_{1+}^{\#1} \dagger^{\alpha\beta}$	$\sigma_{1+}^{\#2} \dagger^{\alpha\beta}$	$\tau_{1+}^{\#1} \dagger^{\alpha\beta}$	$\sigma_{1-}^{\#1} \dagger^{\alpha\beta}$	$\sigma_{1-}^{\#2} \dagger^{\alpha\beta}$	$\tau_{1-}^{\#1} \dagger^{\alpha\beta}$	$\tau_{1-}^{\#2} \dagger^{\alpha\beta}$
$\sigma_{1+}^{\#1} \dagger^{\alpha\beta}$	$\frac{6}{(3+k^2)^2}t_2$	$\frac{3\sqrt{2}}{(3+k^2)^2}t_2$	$\frac{3i\sqrt{2}k}{(3+k^2)^2}t_2$	0	0	0
$\sigma_{1+}^{\#2} \dagger^{\alpha\beta}$	$\frac{3\sqrt{2}}{(3+k^2)^2}t_2$	$\frac{3}{(3+k^2)^2}t_2$	$\frac{3ik}{(3+k^2)^2}t_2$	0	0	0
$\tau_{1+}^{\#1} \dagger^{\alpha\beta}$	$-\frac{3i\sqrt{2}k}{(3+k^2)^2}t_2$	$-\frac{3ik}{(3+k^2)^2}t_2$	$\frac{3k^2}{(3+k^2)^2}t_2$	0	0	0
$\sigma_{1-}^{\#1} \dagger^{\alpha}$	0	0	0	0	0	0
$\sigma_{1-}^{\#2} \dagger^{\alpha}$	0	0	0	0	0	0
$\tau_{1-}^{\#1} \dagger^{\alpha}$	0	0	0	0	0	0
$\tau_{1-}^{\#2} \dagger^{\alpha}$	0	0	0	0	0	0

Lagrangian density

$\frac{2}{3}t_2\omega_{\kappa\lambda}^{\prime}\omega_{\kappa\lambda}^{\prime}+\frac{1}{3}t_2\omega_{\kappa\lambda}^{\prime}\omega_{\kappa\lambda}^{\prime}+f^{\alpha\beta}\tau_{\alpha\beta}+\omega^{\alpha\beta\chi}\sigma_{\alpha\beta\chi}+$
 $\frac{2}{3}r_2\partial^{\beta}\omega_{\kappa}^{\theta\alpha}\partial_{\theta}\omega_{\alpha\beta}^{\kappa}-\frac{1}{3}r_2\partial_{\theta}\omega_{\alpha\beta}^{\kappa}\partial_{\kappa}\omega^{\alpha\beta\theta}-\frac{2}{3}r_2\partial_{\theta}\omega_{\alpha\beta}^{\kappa}\partial_{\kappa}\omega^{\theta\alpha\beta}+$
 $\frac{1}{6}t_2\partial^{\alpha}f_{\theta\kappa}\partial^{\kappa}f_{\alpha}^{\theta}-\frac{1}{6}t_2\partial_2\partial^{\alpha}f_{\kappa\theta}\partial^{\kappa}f_{\alpha}^{\theta}+\frac{1}{6}t_2\partial^{\alpha}f_{\kappa}^{\lambda}\partial^{\kappa}f_{\alpha\lambda}+\frac{1}{3}t_2\omega_{\theta\kappa}\partial^{\kappa}f^{\prime\theta}-$
 $\frac{2}{3}t_2\omega_{\theta\kappa}\partial^{\kappa}f^{\prime\theta}-\frac{1}{3}t_2\omega_{\theta\kappa}\partial^{\kappa}f^{\prime\theta}+\frac{2}{3}t_2\omega_{\theta\kappa\lambda}\partial^{\kappa}f^{\prime\theta}-\frac{1}{6}t_2\partial^{\alpha}f_{\kappa}^{\lambda}\partial^{\kappa}f_{\lambda\alpha}-$
 $\frac{1}{6}t_2\partial_{\kappa}f_{\theta}^{\lambda}\partial^{\kappa}f_{\lambda}^{\theta}+\frac{1}{6}t_2\partial_{\kappa}f_{\theta}^{\lambda}\partial^{\kappa}f_{\lambda}^{\theta}+\frac{1}{3}r_2\partial_{\kappa}\omega^{\alpha\beta\theta}\partial^{\kappa}\omega_{\alpha\beta\theta}+$
 $\frac{2}{3}r_2\partial_{\kappa}\omega^{\theta\alpha\beta}\partial^{\kappa}\omega_{\alpha\beta\theta}-\frac{2}{3}r_2\partial^{\beta}\omega_{\alpha\lambda}^{\prime}\partial_{\lambda}\omega_{\alpha\beta}^{\prime}+\frac{2}{3}r_2\partial^{\beta}\omega_{\alpha\lambda}^{\prime}\partial_{\lambda}\omega_{\alpha\beta}^{\prime}$

Source constraints

SO(3) irreps	#
$\tau_{0+}^{\#2} == 0$	1
$\tau_{0+}^{\#1} == 0$	1
$\sigma_{0+}^{\#1} == 0$	1
$\tau_{1-}^{\#2\alpha} == 0$	3
$\tau_{1-}^{\#1\alpha} == 0$	3
$\sigma_{1-}^{\#2\alpha} == 0$	3
$\sigma_{1-}^{\#1\alpha} == 0$	3
$\tau_{1+}^{\#1\alpha\beta} + i k \sigma_{1+}^{\#1\alpha\beta} == 0$	3
$\sigma_{1+}^{\#1\alpha\beta} == \sigma_{1+}^{\#2\alpha\beta}$	3
$\sigma_{2-}^{\#1\alpha\beta\chi} == 0$	5
$\tau_{2+}^{\#1\alpha\beta} == 0$	5
$\sigma_{2+}^{\#1\alpha\beta} == 0$	5
Total #:	36

$\omega_{0+}^{\#1} \dagger$	$f_{0+}^{\#1} \dagger$	$f_{0+}^{\#2} \dagger$	$\omega_{0-}^{\#1} \dagger$
$\omega_{0+}^{\#1} \dagger$	0	0	0
$f_{0+}^{\#1} \dagger$	0	0	0
$f_{0+}^{\#2} \dagger$	0	0	0
$\omega_{0-}^{\#1} \dagger$	0	0	$k^2r_2+t_2$

$\sigma_{0+}^{\#1} \dagger$	$\tau_{0+}^{\#1} \dagger$	$\tau_{0+}^{\#2} \dagger$	$\sigma_{0-}^{\#1} \dagger$
$\sigma_{0+}^{\#1} \dagger$	0	0	0
$\tau_{0+}^{\#1} \dagger$	0	0	0
$\tau_{0+}^{\#2} \dagger$	0	0	0
$\sigma_{0-}^{\#1} \dagger$	0	0	$\frac{1}{k^2r_2+t_2}$

$\omega_{2+}^{\#1} \dagger^{\alpha\beta}$	$f_{2+}^{\#1} \dagger^{\alpha\beta}$	$\omega_{2-}^{\#1} \dagger^{\alpha\beta\chi}$
$\omega_{2+}^{\#1} \dagger^{\alpha\beta}$	0	0
$f_{2+}^{\#1} \dagger^{\alpha\beta}$	0	0
$\omega_{2-}^{\#1} \dagger^{\alpha\beta\chi}$	0	0

$\sigma_{2+}^{\#1} \dagger^{\alpha\beta}$	$\tau_{2+}^{\#1} \dagger^{\alpha\beta}$	$\sigma_{2-}^{\#1} \dagger^{\alpha\beta\chi}$
$\sigma_{2+}^{\#1} \dagger^{\alpha\beta}$	0	0
$\tau_{2+}^{\#1} \dagger^{\alpha\beta}$	0	0
$\sigma_{2-}^{\#1} \dagger^{\alpha\beta\chi}$	0	0