	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{2}{3 k^2 r_3}$	$-\frac{2 i \sqrt{2}}{3 k r_3+3 k^3 r_3}$	0	0	0	0
$\sigma_{1^+}^{\#2}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{2 \sqrt{2}}{3 k^2 r_3+3 k^4 r_3}$	$\frac{9 k^2 r_3+4 t_2}{3 (k+k^3)^2 r_3 t_2}$	0	0	0	0
$\tau_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{2 i \sqrt{2}}{3 k r_3+3 k^3 r_3}$	$\frac{9 k^2 r_3+4 t_2}{3 (1+k^2)^2 r_3 t_2}$	0	0	0	0
$\sigma_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	$\frac{6}{(3+2 k^2)^2 t_3}$	$-\frac{3 \sqrt{2}}{(3+2 k^2)^2 t_3}$	0	$-\frac{6 i k}{(3+2 k^2)^2 t_3}$
$\sigma_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	$-\frac{3 \sqrt{2}}{(3+2 k^2)^2 t_3}$	$\frac{3}{(3+2 k^2)^2 t_3}$	0	$\frac{3 i \sqrt{2} k}{(3+2 k^2)^2 t_3}$
$\tau_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	$\frac{6 i k}{(3+2 k^2)^2 t_3}$	$-\frac{3 i \sqrt{2} k}{(3+2 k^2)^2 t_3}$	0	$\frac{6 k^2}{(3+2 k^2)^2 t_3}$

Lagrangian density

$$\frac{2}{3} t_3\, \omega_{I}^{\alpha\prime}{}_{\kappa\alpha}\, \omega^{\kappa}{}_{\lambda}{}^{\prime} + \frac{1}{3} t_2\, \omega_{\kappa\lambda}{}^{\prime}\, \omega^{\kappa\lambda}{}_{I}{}^{\prime} + f^{\alpha\beta}\, \tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi} +$$
$$\frac{2}{3} r_2\, \partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\, \partial_{\kappa}\omega^{\alpha\beta\theta} - \frac{2}{3} r_2\, \partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\, \partial_{\kappa}\omega^{\theta\alpha\beta} +$$
$$r_3\, \partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\, \partial_{\kappa}\omega^{\theta\kappa\lambda} + \frac{1}{6} t_2\, \partial^{\alpha} f_{\theta\kappa}\, \partial^{\kappa} f_{\alpha}{}^{\theta} -$$
$$\frac{1}{6} t_2\, \partial^{\alpha} f_{\kappa\theta}\, \partial^{\kappa} f_{\alpha}{}^{\theta} + \frac{1}{6} t_2\, \partial^{\alpha} f_{\kappa}{}^{\lambda}\, \partial^{\kappa} f_{\lambda\alpha} - \frac{2}{3} t_3\, \omega_{\kappa\alpha}{}^{\alpha}\, \partial^{\kappa} f_{I}{}^{\lambda\prime} - \frac{2}{3} t_3\, \omega_{\kappa\lambda}{}^{\lambda}\, \partial^{\kappa} f_{I}{}^{\prime}$$
$$\frac{4}{3} t_3\, \partial^{\alpha} f_{\kappa\alpha}\, \partial^{\kappa} f_{I}{}^{\lambda\prime} + \frac{2}{3} t_3\, \partial_{\kappa} f_{\lambda}{}^{\alpha}\, \partial^{\kappa} f_{I}{}^{\lambda\prime} - \frac{2}{3} t_3\, \partial^{\alpha} f_{\lambda}{}^{\lambda}\, \partial^{\kappa} f_{I}{}^{\prime}{}_{\kappa} -$$
$$\frac{1}{3} t_2\, \omega_{\theta I\kappa}\, \partial^{\kappa} f^{I\theta} + \frac{2}{3} t_2\, \omega_{\theta\kappa I}\, \partial^{\kappa} f^{I}{}_{\alpha}{}^{\theta} + \frac{2}{3} t_3\, \omega_{I\alpha}{}^{\alpha}\, \partial^{\kappa} f^{I}{}_{\kappa} + \frac{2}{3} t_3\, \omega_{I\lambda}{}^{\lambda}\, \partial^{\kappa} f^{I}{}_{\kappa} -$$
$$\frac{1}{6} t_2\, \partial^{\alpha} f^{\lambda}{}_{\kappa}\, \partial^{\kappa} f_{\lambda\alpha} - \frac{1}{6} t_2\, \partial_{\kappa} f^{\lambda}{}_{\theta}\, \partial^{\kappa} f_{\lambda}{}^{\theta} + \frac{2}{3} t_3\, \partial^{\alpha} f^{\lambda}{}_{\alpha}\, \partial^{\kappa} f_{\lambda\kappa} +$$
$$\frac{1}{3} r_2\, \partial_{\kappa}\omega^{\alpha\beta\theta}\, \partial^{\kappa}\omega_{\alpha\beta\theta} - \frac{2}{3} r_2\, \partial^{\beta}\omega_{I}^{\alpha\lambda}\, \partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} +$$
$$\frac{2}{3} r_2\, \partial^{\beta}\omega_{I}^{\lambda\alpha}\, \partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} - r_3\, \partial_{\alpha}\omega_{\lambda}{}^{\alpha}{}_{\theta}\, \partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa} + r_3\, \partial_{\theta}\omega_{\lambda}{}^{\alpha}{}_{\alpha}\, \partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}$$

	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$\omega_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{\sqrt{2} t_2}{3}$	$\frac{1}{3} i \sqrt{2}\, k t_2$	0	0	0	0
$\omega_{1^+}^{\#2}{}^{\dagger}{}^{\alpha\beta}$	$\frac{t_2}{3}$	$\frac{i k t_2}{3}$	0	0	0	0
$f_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{1}{3} i k t_2$	$\frac{k^2 t_2}{3}$	0	0	0	0
$\omega_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	$\frac{2 t_3}{3}$	$-\frac{\sqrt{2} t_3}{3}$	0	$-\frac{2}{3} i k t_3$
$\omega_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	$-\frac{\sqrt{2} t_3}{3}$	$\frac{t_3}{3}$	0	$\frac{1}{3} i \sqrt{2}\, k t_3$
$f_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0	0	0	0	0	0
$f_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0	0	$\frac{2 i k t_3}{3}$	$-\frac{1}{3} i \sqrt{2}\, k t_3$	0	$\frac{2 k^2 t_3}{3}$

	$\omega_{1^+}^{\#1}{}_{\alpha\beta}$
$\omega_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$\frac{1}{6} (9 k^2 r_3 + 4 t_2)$
$\omega_{1^+}^{\#2}{}^{\dagger}{}^{\alpha\beta}$	$\frac{\sqrt{2} t_2}{3}$
$f_{1^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{1}{3} i \sqrt{2}\, k t_2$
$\omega_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0
$\omega_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0
$f_{1^-}^{\#1}{}^{\dagger}{}^{\alpha}$	0
$f_{1^-}^{\#2}{}^{\dagger}{}^{\alpha}$	0

	$\sigma_{2^+}^{\#1}{}_{\alpha\beta}$	$\tau_{2^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{2^-}^{\#1}{}_{\alpha\beta\chi}$
$\sigma_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{2}{3 k^2 r_3}$	0	0
$\tau_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	0	0	0
$\sigma_{2^-}^{\#1}{}^{\dagger}{}^{\alpha\beta\chi}$	0	0	0

	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1}{}^{\dagger}$	$\frac{1}{(1+2 k^2)^2 t_3}$	$-\frac{i \sqrt{2} k}{(1+2 k^2)^2 t_3}$	0	0
$\tau_{0^+}^{\#1}{}^{\dagger}$	$\frac{i \sqrt{2} k}{(1+2 k^2)^2 t_3}$	$\frac{2 k^2}{(1+2 k^2)^2 t_3}$	0	0
$\tau_{0^+}^{\#2}{}^{\dagger}$	0	0	0	0
$\sigma_{0^-}^{\#1}{}^{\dagger}$	0	0	0	$\frac{1}{k^2 r_2 + t_2}$

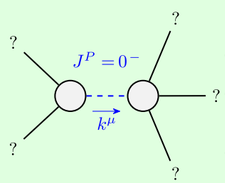
	$\omega_{2^+}^{\#1}{}_{\alpha\beta}$	$f_{2^+}^{\#1}{}_{\alpha\beta}$	$\omega_{2^-}^{\#1}{}_{\alpha\beta\chi}$
$\omega_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	$-\frac{3 k^2 r_3}{2}$	0	0
$f_{2^+}^{\#1}{}^{\dagger}{}^{\alpha\beta}$	0	0	0
$\omega_{2^-}^{\#1}{}^{\dagger}{}^{\alpha\beta\chi}$	0	0	0

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

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

Source constraints

SO(3) irreps	#
$\tau_{0^+}^{\#2} == 0$	1
$\tau_{0^+}^{\#1} - 2\, i\, k\, \sigma_{0^+}^{\#1} == 0$	1
$\tau_{1^-}^{\#2\,\alpha} - i\, k\, \sigma_{1^-}^{\#1\,\alpha} == 0$	3
$\tau_{1^-}^{\#1\,\alpha} == 0$	3
$\sigma_{1^-}^{\#1\,\alpha} + 2\, \sigma_{1^-}^{\#2\,\alpha} == 0$	3
$\tau_{1^+}^{\#1\,\alpha\beta} + i\, k\, \sigma_{1^+}^{\#2\,\alpha\beta} == 0$	3
$\sigma_{2^-}^{\#1\,\alpha\beta\chi} == 0$	5
$\tau_{2^+}^{\#1\,\alpha\beta} == 0$	5
Total #:	24



Massive particle

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

(No massless particles)

Unitarity conditions

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