Source constraints	#
SO(3) irreps	
$\tau_{0^+}^{\#2} == 0$	1
$\tau_{0^+}^{\#1} - 2\,i\,k\,\sigma_{0^+}^{\#1} == 0$	1
$\tau_{1^-}^{\#2\,\alpha} + 2\,i\,k\,\sigma_{1^-}^{\#2\,\alpha} == 0$	3
$\tau_{1^-}^{\#1\,\alpha} == 0$	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 #:	21

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

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

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

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

	$\tau_{1^+\,\alpha\beta}^{\#1}$	$\sigma_{1^-\,\alpha}^{\#1}$	$\sigma_{1^-\,\alpha}^{\#2}$	$\tau_{1^-\,\alpha}^{\#1}$	$\tau_{1^-\,\alpha}^{\#2}$
$\sigma_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$-\frac{i\sqrt{2}}{k(1+k^2)(2r_3+r_5)}$	0	0	0	0
$\sigma_{1^+}^{\#2\,\alpha\beta}\,\dagger$	$\frac{i(3k^2(2r_3+r_5)+2t_2)}{k(1+k^2)^2(2r_3+r_5)t_2}$	0	0	0	0
$\tau_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$\frac{3k^2(2r_3+r_5)+2t_2}{(1+k^2)^2(2r_3+r_5)t_2}$	0	0	0	0
$\sigma_{1^-}^{\#1\,\alpha}\,\dagger$	0	$\frac{2}{k^2(r_3+2r_5)}$	$\frac{2\sqrt{2}}{k^2(1+2k^2)(r_3+2r_5)}$	0	$\frac{4i}{k(1+2k^2)(r_3+2r_5)}$
$\sigma_{1^-}^{\#2\,\alpha}\,\dagger$	0	$\frac{2\sqrt{2}}{k^2(1+2k^2)(r_3+2r_5)}$	$\frac{3k^2(r_3+2r_5)+4t_3}{(k+2k^3)^2(r_3+2r_5)t_3}$	0	$\frac{i\sqrt{2}(3k^2(r_3+2r_5)+4t_3)}{k(1+2k^2)^2(r_3+2r_5)t_3}$
$\tau_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	0	0
$\tau_{1^-}^{\#2\,\alpha}\,\dagger$	0	$-\frac{4i}{k(1+2k^2)(r_3+2r_5)}$	$-\frac{i\sqrt{2}(3k^2(r_3+2r_5)+4t_3)}{k(1+2k^2)^2(r_3+2r_5)t_3}$	0	$\frac{6k^2(r_3+2r_5)+8t_3}{(1+2k^2)^2(r_3+2r_5)t_3}$

	$\omega_{1^+\,\alpha\beta}^{\#1}$	$\omega_{1^+\,\alpha\beta}^{\#2}$	$f_{1^+\,\alpha\beta}^{\#1}$	$\omega_{1^-\,\alpha}^{\#1}$	$\omega_{1^-\,\alpha}^{\#2}$	$f_{1^-\,\alpha}^{\#1}$	$f_{1^-\,\alpha}^{\#2}$
$\omega_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$k^2(2r_3+r_5)+\frac{2t_2}{3}$	$\frac{\sqrt{2}\,t_2}{3}$	$-\frac{1}{3}i\sqrt{2}\,k\,t_2$	0	0	0	0
$\omega_{1^+}^{\#2\,\alpha\beta}\,\dagger$	$\frac{\sqrt{2}\,t_2}{3}$	$\frac{t_2}{3}$	$\frac{i\,k\,t_2}{3}$	0	0	0	0
$f_{1^+}^{\#1\,\alpha\beta}\,\dagger$	$-\frac{1}{3}i\sqrt{2}\,k\,t_2$	$\frac{i\,k\,t_2}{3}$	$\frac{k^2 t_2}{3}$	0	0	0	0
$\omega_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	$k^2(\frac{r_3}{2}+r_5)+\frac{2t_3}{3}$	$-\frac{\sqrt{2}\,t_3}{3}$	$-\frac{2}{3}i\,k\,t_3$	0
$\omega_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	$-\frac{\sqrt{2}\,t_3}{3}$	$\frac{t_3}{3}$	$\frac{1}{3}i\sqrt{2}\,k\,t_3$	0
$f_{1^-}^{\#1\,\alpha}\,\dagger$	0	0	0	0	0	0	$\frac{2k^2 t_3}{3}$
$f_{1^-}^{\#2\,\alpha}\,\dagger$	0	0	0	$\frac{2ik t_3}{3}$	$-\frac{1}{3}i\sqrt{2}\,k\,t_3$	0	0

Lagrangian density

$$\frac{2}{3}t_3\,\omega_{\iota}^{\alpha\iota}\,\omega_{\kappa\alpha}^{\ \ \kappa}+\frac{2}{3}t_2\,\omega_{\iota}^{\ \kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime}+\frac{1}{3}t_2\,\omega_{\kappa\lambda}^{\ \ \prime}\,\omega^{\kappa\lambda}_{\ \ \iota}+f^{\alpha\beta}\,\tau_{\alpha\beta}+$$
$$\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}-\frac{1}{2}r_3\,\partial_{\iota}\omega^{\kappa\lambda}_{\ \ \kappa}\,\partial^{\prime}\omega_{\lambda}^{\ \alpha}_{\ \alpha}-r_5\,\partial_{\iota}\omega^{\kappa\lambda}_{\ \ \kappa}\,\partial^{\prime}\omega_{\lambda}^{\ \alpha}_{\ \alpha}+\frac{1}{2}r_3\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}-$$
$$r_5\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}-\frac{1}{2}r_3\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}+r_5\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}-\frac{1}{2}r_3\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}-$$
$$r_5\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}+r_3\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}+2\,r_5\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}+$$
$$\frac{1}{6}t_2\,\partial^{\alpha}f_{\theta\kappa}\,\partial^{\kappa}f_{\alpha}^{\ \theta}-\frac{1}{6}t_2\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}^{\ \theta}+\frac{1}{6}t_2\,\partial^{\alpha}f^{\lambda}_{\ \kappa}\,\partial^{\kappa}f_{\alpha\lambda}-\frac{2}{3}t_3\,\omega_{\kappa\alpha}^{\ \ \alpha}\,\partial^{\kappa}f^{\prime}_{\ \iota}-$$
$$\frac{2}{3}t_3\,\omega_{\kappa\lambda}^{\ \ \lambda}\,\partial^{\kappa}f^{\prime}_{\ \iota}-\frac{4}{3}t_3\,\partial^{\alpha}f_{\kappa\alpha}\,\partial^{\kappa}f^{\prime}_{\ \iota}+\frac{2}{3}t_3\,\partial_{\kappa}f^{\lambda}_{\ \lambda}\,\partial^{\kappa}f^{\prime}_{\ \iota}+\frac{1}{3}t_2\,\omega_{\iota\theta\kappa}\,\partial^{\kappa}f^{\prime\theta}-$$
$$\frac{2}{3}t_2\,\omega_{\iota\kappa\theta}\,\partial^{\kappa}f^{\prime\theta}-\frac{1}{3}t_2\,\omega_{\theta\iota\kappa}\,\partial^{\kappa}f^{\prime\theta}+\frac{2}{3}t_2\,\omega_{\theta\kappa\iota}\,\partial^{\kappa}f^{\prime\theta}+\frac{2}{3}t_3\,\omega_{\iota\alpha}^{\ \ \alpha}\,\partial^{\kappa}f^{\prime}_{\ \kappa}+$$
$$\frac{2}{3}t_3\,\omega_{\iota\lambda}^{\ \ \lambda}\,\partial^{\kappa}f^{\prime}_{\ \kappa}-\frac{1}{6}t_2\,\partial^{\alpha}f^{\lambda}_{\ \kappa}\,\partial^{\kappa}f_{\lambda\alpha}-\frac{1}{6}t_2\,\partial_{\kappa}f_{\theta}^{\ \lambda}\,\partial^{\kappa}f_{\lambda}^{\ \theta}+\frac{1}{6}t_2\,\partial_{\kappa}f^{\lambda}_{\ \theta}\,\partial^{\kappa}f_{\lambda}^{\ \theta}+$$
$$\frac{2}{3}t_3\,\partial^{\alpha}f^{\lambda}_{\ \alpha}\,\partial^{\kappa}f_{\lambda\kappa}-4\,r_3\,\partial^{\beta}\omega_{\iota}^{\ \lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}^{\ \ \prime}-\frac{1}{2}r_3\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial^{\lambda}\omega^{\theta\kappa}_{\ \ \kappa}+$$
$$r_5\,\partial_{\alpha}\omega_{\lambda}^{\ \alpha}_{\ \theta}\,\partial^{\lambda}\omega^{\theta\kappa}_{\ \ \kappa}+\frac{1}{2}r_3\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial^{\lambda}\omega^{\theta\kappa}_{\ \ \kappa}-r_5\,\partial_{\theta}\omega_{\lambda}^{\ \alpha}_{\ \alpha}\,\partial^{\lambda}\omega^{\theta\kappa}_{\ \ \kappa}$$

Quadratic pole

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

(No massive particles)

Unitarity conditions

$$r_3 < 0\ \&\&\ (r_5 < -\frac{r_3}{2}\ ||\ r_5 > -2\,r_3)\ ||\ r_3 > 0\ \&\&\ -2\,r_3 < r_5 < -\frac{r_3}{2}$$