Lagrangian density

$$-t_1\,\omega_\iota{}^{\alpha\iota}\,\omega_{\kappa\alpha}{}^\kappa - \tfrac{1}{3}t_1\,\omega_\iota{}^{\kappa\lambda}\,\omega_{\kappa\lambda}{}^\iota + \tfrac{1}{3}t_1\,\omega_{\kappa\lambda}{}^\iota\,\omega^{\kappa\lambda}{}_\iota - r_5\,\partial_\iota\omega^{\kappa\lambda}{}_\kappa\,\partial^\iota\omega_\lambda{}^\alpha{}_\alpha -$$

$$\tfrac{2}{3}r_1\,\partial^\beta\omega^{\theta\alpha}{}_\kappa\,\partial_\theta\omega_{\alpha\beta}{}^\kappa - \tfrac{2}{3}r_1\,\partial_\theta\omega_{\alpha\beta}{}^\kappa\,\partial_\kappa\omega^{\alpha\beta\theta} + \tfrac{2}{3}r_1\,\partial_\theta\omega_{\alpha\beta}{}^\kappa\,\partial_\kappa\omega^{\theta\alpha\beta} -$$

$$r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\theta\,\partial_\kappa\omega^{\theta\kappa\lambda} + r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial_\kappa\omega^{\theta\kappa\lambda} - r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\theta\,\partial_\kappa\omega^{\kappa\lambda\theta} +$$

$$2r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial_\kappa\omega^{\kappa\lambda\theta} - \tfrac{1}{3}t_1\,\partial^\alpha f_{\theta\kappa}\,\partial^\kappa f_\alpha{}^\theta - \tfrac{2}{3}t_1\,\partial^\alpha f_{\kappa\theta}\,\partial^\kappa f_\alpha{}^\theta -$$

$$\tfrac{1}{3}t_1\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\alpha\lambda} + t_1\,\omega_{\kappa\alpha}{}^\alpha\,\partial^\kappa f^\iota{}_\iota + t_1\,\omega_{\kappa\lambda}{}^\lambda\,\partial^\kappa f^\iota{}_\iota + 2t_1\,\partial^\alpha f_{\kappa\alpha}\,\partial^\kappa f^\iota{}_\iota -$$

$$t_1\,\partial_\kappa f^\lambda{}_\lambda\,\partial^\kappa f^\iota{}_\iota + \tfrac{1}{3}t_1\,\omega_{\iota\theta\kappa}\,\partial^\kappa f^{\iota\theta} + \tfrac{4}{3}t_1\,\omega_{\iota\kappa\theta}\,\partial^\kappa f^{\iota\theta} - \tfrac{1}{3}t_1\,\omega_{\theta\iota\kappa}\,\partial^\kappa f^{\iota\theta} +$$

$$\tfrac{2}{3}t_1\,\omega_{\theta\kappa\iota}\,\partial^\kappa f^{\iota\theta} - t_1\,\omega_{\iota\alpha}{}^\alpha\,\partial^\kappa f^\iota{}_\kappa - t_1\,\omega_{\iota\lambda}{}^\lambda\,\partial^\kappa f^\iota{}_\kappa + \tfrac{1}{3}t_1\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\lambda\alpha} +$$

$$\tfrac{1}{3}t_1\,\partial_\kappa f_\theta{}^\lambda\,\partial^\kappa f_\lambda{}^\theta + \tfrac{2}{3}t_1\,\partial_\kappa f^\lambda{}_\theta\,\partial^\kappa f_\lambda{}^\theta - t_1\,\partial^\alpha f^\lambda{}_\alpha\,\partial^\kappa f_{\lambda\kappa} +$$

$$\tfrac{2}{3}r_1\,\partial_\kappa\omega^{\alpha\beta\theta}\,\partial^\kappa\omega_{\alpha\beta\theta} - \tfrac{2}{3}r_1\,\partial_\kappa\omega^{\theta\alpha\beta}\,\partial^\kappa\omega_{\alpha\beta\theta} + \tfrac{2}{3}r_1\,\partial^\beta\omega_\iota{}^{\alpha\lambda}\,\partial_\lambda\omega_{\alpha\beta}{}^\iota -$$

$$\tfrac{8}{3}r_1\,\partial^\beta\omega_\iota{}^{\lambda\alpha}\,\partial_\lambda\omega_{\alpha\beta}{}^\iota + r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\theta\,\partial^\lambda\omega^{\theta\kappa}{}_\kappa - r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial^\lambda\omega^{\theta\kappa}{}_\kappa$$

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

Source constraints

SO(3) irreps	#
$\sigma^{\#1}_0 == 0$	1
$\tau^{\#2}_0 == 0$	1
$\tau^{\#1}_0{}^+ - 2\,i\,k\,\sigma^{\#1}_{0^+} == 0$	1
$\tau^{\#2\alpha}_1 + 2\,i\,k\,\sigma^{\#2\alpha}_1 == 0$	3
$\tau^{\#1\alpha}_1 == 0$	3
$\tau^{\#1\alpha\beta}_{1^+} + i\,k\,\sigma^{\#2\,\alpha\beta}_{1^+} == 0$	3
$\tau^{\#1\,\alpha\beta}_{2^+} - 2\,i\,k\,\sigma^{\#1\,\alpha\beta}_{2^+} == 0$	5
Total #:	17

Table 1

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

Table 2

	$\omega^{\#1}_{1^+\alpha\beta}$	$\omega^{\#2}_{1^+\alpha\beta}$	$f^{\#1}_{1^+\alpha\beta}$	$\omega^{\#1}_{1^-\alpha}$	$\omega^{\#2}_{1^-\alpha}$	$f^{\#1}_{1^-\alpha}$	$f^{\#2}_{1^-\alpha}$
$\omega^{\#1}_{1^+}{}^{\dagger\alpha\beta}$	$k^2(2r_1+r_5)+\frac{t_1}{6}$	$-\frac{t_1}{3\sqrt{2}}$	$-\frac{ikt_1}{3\sqrt{2}}$	0	0	0	0
$\omega^{\#2}_{1^+}{}^{\dagger\alpha\beta}$	$-\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	$\frac{ikt_1}{3}$	0	0	0	0
$f^{\#1}_{1^+}{}^{\dagger\alpha\beta}$	$\frac{ikt_1}{3\sqrt{2}}$	$-\frac{1}{3}i\,k\,t_1$	$\frac{k^2t_1}{3}$	0	0	0	0
$\omega^{\#1}_{1^-}{}^{\dagger\alpha}$	0	0	0	$k^2(r_1+r_5)-\frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	$i\,k\,t_1$
$\omega^{\#2}_{1^-}{}^{\dagger\alpha}$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$f^{\#1}_{1^-}{}^{\dagger\alpha}$	0	0	0	0	0	0	0
$f^{\#2}_{1^-}{}^{\dagger\alpha}$	0	0	0	$-i\,k\,t_1$	0	0	0

Table 3

	$\sigma^{\#1}_{2^+\alpha\beta}$	$\tau^{\#1}_{2^+\alpha\beta}$	$\sigma^{\#1}_{2^-\alpha\beta\chi}$
$\sigma^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$\frac{2}{(1+2k^2)^2t_1}$	$-\frac{2i\sqrt{2}k}{(1+2k^2)^2t_1}$	0
$\tau^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$\frac{2i\sqrt{2}k}{(1+2k^2)^2t_1}$	$\frac{4k^2}{(1+2k^2)^2t_1}$	0
$\sigma^{\#1}_{2^-}{}^{\dagger\alpha\beta\chi}$	0	0	$\frac{2}{2k^2r_1+t_1}$

Table (0+ / 0-)

	$\sigma^{\#1}_{0^-}$	$\tau^{\#2}_{0^+}$	$\tau^{\#1}_{0^+}$	$\sigma^{\#1}_{0^+}$	
$\sigma^{\#1}_{0^+}{}^\dagger$	0	0	$-\frac{i\sqrt{2}k}{(1+2k^2)^2t_1}$	$\frac{1}{(1+2k^2)^2t_1}$	$\sigma^{\#1}_{0^+}$
$\tau^{\#1}_{0^+}{}^\dagger$	0	0	$-\frac{2k^2}{(1+2k^2)^2t_1}$	$\frac{i\sqrt{2}k}{(1+2k^2)^2t_1}$	$\tau^{\#1}_{0^+}$
$\tau^{\#2}_{0^+}{}^\dagger$	0	0	0	0	$\tau^{\#2}_{0^+}$
$\sigma^{\#1}_{0^-}{}^\dagger$	0	0	0	0	$\sigma^{\#1}_{0^-}$

Table (0+ omega/f)

	$\omega^{\#1}_{0^+}$	$f^{\#1}_{0^+}$	$f^{\#2}_{0^+}$	$\omega^{\#1}_{0^-}$
$\omega^{\#1}_{0^+}{}^\dagger$	$-t_1$	$i\sqrt{2}\,k\,t_1$	0	0
$f^{\#1}_{0^+}{}^\dagger$	$-i\sqrt{2}\,k\,t_1$	$-2k^2t_1$	0	0
$f^{\#2}_{0^+}{}^\dagger$	0	0	0	0
$\omega^{\#1}_{0^-}{}^\dagger$	0	0	0	0

Table (2+ / 2-)

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

Massive particle $J^P = 2^-$

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:	$\frac{1}{(2r_1+r_5)t_1^2p^2} > 0$
Polarisations:	2

Unitarity conditions

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