Lagrangian density

$$
\begin{aligned}
&-t_1\,\omega_{\iota}^{\alpha\prime}\,\omega_{\kappa\alpha}^{\ \ \kappa}-\tfrac{1}{3}t_1\,\omega_{\iota}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime}+\tfrac{2}{3}t_2\,\omega_{\iota}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime}+\\
&\tfrac{1}{3}t_1\,\omega_{\kappa\lambda}^{\ \ \prime}\,\omega_{\iota}^{\kappa\lambda}+\tfrac{1}{3}t_2\,\omega_{\kappa\lambda}^{\ \ \prime}\,\omega_{\iota}^{\kappa\lambda}+f^{\alpha\beta}\,\tau_{\alpha\beta}+\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}+\\
&2r_1\,\partial_{\iota}\omega_{\kappa\lambda}^{\ \ \alpha}\,\partial^{\iota}\omega^{\kappa\lambda}{}_{\alpha}-\tfrac{2}{3}r_1\,\partial^{\beta}\omega^{\theta\alpha}{}_{\kappa}\,\partial_{\theta}\omega_{\alpha\beta}^{\ \ \kappa}+\tfrac{2}{3}r_2\,\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{1}{3}r_2\,\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^{\beta\alpha\theta}-\\
&\tfrac{2}{3}r_2\,\partial_{\theta}\omega_{\alpha\beta}^{\ \ \kappa}\,\partial_{\kappa}\omega^{\theta\alpha\beta}+2r_1\,\partial_{\alpha}\omega_{\lambda\ \theta}^{\ \alpha}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}-2r_1\,\partial_{\theta}\omega_{\lambda\ \alpha}^{\ \alpha}\,\partial_{\kappa}\omega^{\theta\kappa\lambda}+\\
&2r_1\,\partial_{\alpha}\omega_{\lambda\ \theta}^{\ \alpha}\,\partial_{\kappa}\omega^{\kappa\lambda\theta}-4r_1\,\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{1}{6}t_2\,\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}{6}t_2\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}^{\ \ \theta}-\tfrac{1}{3}t_1\,\partial^{\alpha}f_{\kappa}^{\ \lambda}\,\partial^{\kappa}f_{\alpha\lambda}+\\
&\tfrac{1}{6}t_2\,\partial^{\alpha}f_{\iota}^{\ \lambda}\,\partial^{\kappa}f_{\kappa}^{\ \ \lambda}+t_1\,\omega_{\kappa\alpha}^{\ \ \alpha}\,\partial^{\kappa}f_{\iota}^{\ \lambda}+2t_1\,\partial^{\alpha}f_{\kappa\alpha}\,\partial^{\kappa}f_{\iota}^{\ \prime}-\\
&t_1\,\partial_{\kappa}f_{\lambda}^{\ \lambda}\,\partial^{\kappa}f_{\iota}^{\ \prime}+\tfrac{1}{3}t_1\,\omega_{\iota\theta\kappa}\,\partial^{\kappa}f^{\iota\theta}+\tfrac{1}{3}t_2\,\omega_{\iota\theta\kappa}\,\partial^{\kappa}f^{\iota\theta}+\tfrac{4}{3}t_1\,\omega_{\iota\kappa\theta}\,\partial^{\kappa}f^{\iota\theta}-\\
&\tfrac{2}{3}t_2\,\omega_{\iota\kappa\theta}\,\partial^{\kappa}f^{\iota\theta}-\tfrac{1}{3}t_1\,\omega_{\theta\iota\kappa}\,\partial^{\kappa}f^{\iota\theta}-\tfrac{1}{3}t_2\,\omega_{\theta\iota\kappa}\,\partial^{\kappa}f^{\iota\theta}+\tfrac{2}{3}t_1\,\omega_{\theta\kappa\iota}\,\partial^{\kappa}f^{\iota\theta}+\\
&\tfrac{2}{3}t_2\,\omega_{\theta\kappa\iota}\,\partial^{\kappa}f^{\iota\theta}-t_1\,\omega_{\iota\alpha}^{\ \ \alpha}\,\partial^{\kappa}f_{\kappa}^{\ \prime}-t_1\,\omega_{\iota\lambda}^{\ \ \lambda}\,\partial^{\kappa}f_{\kappa}^{\ \prime}+\tfrac{1}{3}t_1\,\partial^{\kappa}f_{\kappa}^{\ \lambda}\,\partial^{\iota}f_{\lambda\alpha}-\\
&\tfrac{1}{6}t_2\,\partial^{\alpha}f_{\kappa}^{\ \lambda}\,\partial^{\kappa}f_{\lambda\alpha}+\tfrac{1}{3}t_1\,\partial_{\kappa}f_{\theta}^{\ \lambda}\,\partial^{\kappa}f_{\lambda}^{\ \theta}-\tfrac{1}{6}t_2\,\partial_{\kappa}f_{\theta}^{\ \lambda}\,\partial^{\kappa}f_{\lambda}^{\ \theta}+\tfrac{2}{3}t_1\,\partial_{\kappa}f_{\theta}^{\ \lambda}\,\partial^{\kappa}f_{\lambda}^{\ \theta}+\\
&\tfrac{1}{6}t_2\,\partial_{\kappa}f_{\theta}^{\ \lambda}\,\partial^{\kappa}f_{\lambda}^{\ \theta}-t_1\,\partial^{\alpha}f_{\lambda}^{\ \theta}\,\partial^{\kappa}f_{\alpha}^{\ \lambda}+\tfrac{2}{3}r_1\,\partial_{\kappa}\omega^{\alpha\beta\theta}\,\partial^{\kappa}\omega_{\alpha\beta\theta}+\\
&\tfrac{1}{3}r_2\,\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_2\,\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}^{\ \ \prime}-\tfrac{2}{3}r_2\,\partial^{\beta}\omega_{\iota}^{\ \alpha\lambda}\,\partial_{\lambda}\omega_{\alpha\beta}^{\ \ \prime}-\tfrac{8}{3}r_1\,\partial^{\beta}\omega_{\iota}^{\ \lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}^{\ \ \prime}+\\
&\tfrac{2}{3}r_2\,\partial^{\beta}\omega_{\iota}^{\ \lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}^{\ \ \prime}-2r_1\,\partial_{\alpha}\omega_{\lambda\ \theta}^{\ \alpha}\,\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}+2r_1\,\partial_{\theta}\omega_{\lambda\ \alpha}^{\ \alpha}\,\partial^{\lambda}\omega^{\theta\kappa}{}_{\kappa}
\end{aligned}
$$

	$\sigma_{1^+}^{\#1}{}^{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}^{\alpha\beta}$	$\tau_{1^+}^{\#1}{}^{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}^{\alpha}$	$\sigma_{1^-}^{\#2}{}^{\alpha}$	$\tau_{1^-}^{\#1}{}^{\alpha}$	$\tau_{1^-}^{\#2}{}^{\alpha}$
$\sigma_{1^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$\frac{2(t_1+t_2)}{3t_1t_2}$	$\frac{\sqrt{2}\,(t_1-2t_2)}{3(1+k^2)t_1t_2}$	$\frac{i\sqrt{2}\,k(t_1-2t_2)}{3(1+k^2)t_1t_2}$	0	0	0	0
$\sigma_{1^+}^{\#2}{}^{\alpha\beta}\,\dagger$	$\frac{\sqrt{2}\,(t_1-2t_2)}{3(1+k^2)t_1t_2}$	$\frac{t_1+4t_2}{3(1+k^2)^2t_1t_2}$	$\frac{ik(t_1+4t_2)}{3(1+k^2)^2t_1t_2}$	0	0	0	0
$\tau_{1^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$-\frac{i\sqrt{2}\,k(t_1-2t_2)}{3(1+k^2)t_1t_2}$	$-\frac{ik(t_1+4t_2)}{3(1+k^2)^2t_1t_2}$	$\frac{k^2(t_1+4t_2)}{3(1+k^2)^2t_1t_2}$	0	0	0	0
$\sigma_{1^-}^{\#1}{}^{\alpha}\,\dagger$	0	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2t_1}$	0	$\frac{2ik}{t_1+2k^2t_1}$
$\sigma_{1^-}^{\#2}{}^{\alpha}\,\dagger$	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2t_1}$	$\frac{2k^2r_1+t_1}{(t_1+2k^2t_1)^2}$	0	$\frac{i\sqrt{2}\,k(2k^2r_1+t_1)}{(t_1+2k^2t_1)^2}$
$\tau_{1^-}^{\#1}{}^{\alpha}\,\dagger$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}^{\alpha}\,\dagger$	0	0	0	$-\frac{2ik}{t_1+2k^2t_1}$	$-\frac{i\sqrt{2}\,k(2k^2r_1+t_1)}{(t_1+2k^2t_1)^2}$	0	$\frac{2k^2(2k^2r_1+t_1)}{(t_1+2k^2t_1)^2}$

	$\omega_{1^+}^{\#1}{}^{\alpha\beta}$	$\omega_{1^+}^{\#2}{}^{\alpha\beta}$	$f_{1^+}^{\#1}{}^{\alpha\beta}$	$\omega_{1^-}^{\#1}{}^{\alpha}$	$\omega_{1^-}^{\#2}{}^{\alpha}$	$f_{1^-}^{\#1}{}^{\alpha}$	$f_{1^-}^{\#2}{}^{\alpha}$
$\omega_{1^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$\frac{1}{6}(t_1+4t_2)$	$-\frac{t_1-2t_2}{3\sqrt{2}}$	$-\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2}{}^{\alpha\beta}\,\dagger$	$-\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{t_1+t_2}{3}$	$\frac{1}{3}ik(t_1+t_2)$	0	0	0	0
$f_{1^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	$-\frac{1}{3}ik(t_1+t_2)$	$\frac{1}{3}k^2(t_1+t_2)$	0	0	0	0
$\omega_{1^-}^{\#1}{}^{\alpha}\,\dagger$	0	0	0	$-k^2r_1-\frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	$-ikt_1$
$\omega_{1^-}^{\#2}{}^{\alpha}\,\dagger$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$f_{1^-}^{\#1}{}^{\alpha}\,\dagger$	0	0	0	0	0	0	0
$f_{1^-}^{\#2}{}^{\alpha}\,\dagger$	0	0	0	$-ikt_1$	0	0	0

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

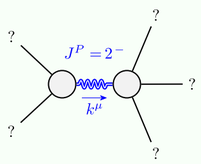
	$\sigma_{2^+}^{\#1}{}_{\alpha\beta}$	$\tau_{2^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{2^-}^{\#1}{}_{\alpha\beta\chi}$
$\sigma_{2^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$\frac{2}{(1+2k^2)^2t_1}$	$-\frac{2i\sqrt{2}\,k}{(1+2k^2)^2t_1}$	0
$\tau_{2^+}^{\#1}{}^{\alpha\beta}\,\dagger$	$\frac{2i\sqrt{2}\,k}{(1+2k^2)^2t_1}$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

	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1}\,\dagger$	$-\frac{1}{(1+2k^2)^2t_1}$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2t_1}$	0	0
$\tau_{0^+}^{\#1}\,\dagger$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2t_1}$	$-\frac{2k^2}{(1+2k^2)^2t_1}$	0	0
$\tau_{0^+}^{\#2}\,\dagger$	0	0	0	0
$\sigma_{0^-}^{\#1}\,\dagger$	0	0	0	$\frac{1}{k^2r_2+t_2}$

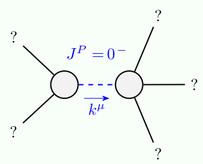
	$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+}^{\#1}\,\dagger$	$-t_1$	$i\sqrt{2}\,kt_1$	0	0
$f_{0^+}^{\#1}\,\dagger$	$-i\sqrt{2}\,kt_1$	$-2k^2t_1$	0	0
$f_{0^+}^{\#2}\,\dagger$	0	0	0	0
$\omega_{0^-}^{\#1}\,\dagger$	0	0	0	$k^2r_2+t_2$

Source constraints

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



Massive particle	
Pole residue:	$-\frac{1}{r_1}>0$
Polarisations:	5
Square mass:	$-\frac{t_1}{2r_1}>0$
Spin:	2
Parity:	Odd



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)

$r_1<0\ \&\&\ r_2<0\ \&\&\ t_1>0\ \&\&\ t_2>0$