$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$-\frac{i\sqrt{2}\,k}{t_1+k^2 t_1}$	0	0	0	0
$\frac{-2ik^3(2r_3+r_5)+ikt_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\frac{-2k^4(2r_3+r_5)+k^2 t_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
0	$\frac{1}{k^2(2r_3+r_5)}$	$-\frac{1}{\sqrt{2}\,(k^2+2k^4)(2r_3+r_5)}$	0	$-\frac{i}{k(1+2k^2)(2r_3+r_5)}$
0	$\frac{1}{\sqrt{2}\,(k^2+2k^4)(2r_3+r_5)}$	$\frac{6k^2(2r_3+r_5)+t_1}{2(k+2k^3)^2(2r_3+r_5)t_1}$	0	$\frac{i(6k^2(2r_3+r_5)+t_1)}{\sqrt{2}\,k(1+2k^2)^2(2r_3+r_5)t_1}$
0	0	0	0	0
0	$\frac{i}{k(1+2k^2)(2r_3+r_5)}$	$-\frac{i(6k^2(2r_3+r_5)+t_1)}{\sqrt{2}\,k(1+2k^2)^2(2r_3+r_5)t_1}$	0	$\frac{6k^2(2r_3+r_5)+t_1}{(1+2k^2)^2(2r_3+r_5)t_1}$

$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
0	$-\frac{\sqrt{2}}{t_1+k^2 t_1}$	$\frac{i\sqrt{2}\,k}{t_1+k^2 t_1}$	0	0	0	0
$-\frac{\sqrt{2}}{t_1+k^2 t_1}$	$\frac{-2k^2(2r_3+r_5)+t_1}{(1+k^2)^2 t_1^2}$	$\frac{-2ik^3(2r_3+r_5)+ikt_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
$\frac{i\sqrt{2}\,k}{t_1+k^2 t_1}$	$\frac{i(2k^3(2r_3+r_5)-kt_1)}{(1+k^2)^2 t_1^2}$	$\frac{-2k^4(2r_3+r_5)+k^2 t_1}{(1+k^2)^2 t_1^2}$	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

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

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

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

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

$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\frac{1}{6k^2 r_3}$	0	0	0
0	0	0	0
0	0	0	0
0	0	0	$\frac{1}{k^2 r_2 - t_1}$

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

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

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

$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$6k^2 r_3$	0	0	0
0	0	0	0
0	0	0	0
0	0	0	$k^2 r_2 - t_1$

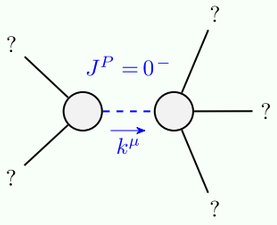
$\omega_{0^+}^{\#1\dagger}$
$f_{0^+}^{\#1\dagger}$
$f_{0^+}^{\#2\dagger}$
$\omega_{0^-}^{\#1\dagger}$

$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$k^2(2r_3+r_5)-\frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{ikt_1}{\sqrt{2}}$	0	0	0	0
$-\frac{t_1}{\sqrt{2}}$	0	0	0	0	0	0
$\frac{ikt_1}{\sqrt{2}}$	0	0	0	0	0	0
0	0	0	$k^2(2r_3+r_5)+\frac{t_1}{6}$	$\frac{t_1}{3\sqrt{2}}$	0	$\frac{ikt_1}{3}$
0	0	0	$\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	0	$\frac{1}{3}i\sqrt{2}\,kt_1$
0	0	0	0	0	0	0
0	0	0	$-\frac{1}{3}i\sqrt{2}\,kt_1$	$-\frac{1}{3}ikt_1$	0	$\frac{2k^2 t_1}{3}$

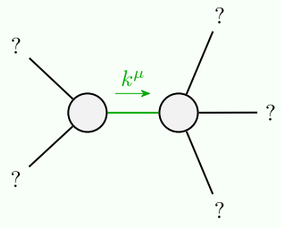
$\omega_{1^+}^{\#1\dagger\,\alpha\beta}$
$\omega_{1^+}^{\#2\dagger\,\alpha\beta}$
$f_{1^+}^{\#1\dagger\,\alpha\beta}$
$\omega_{1^-}^{\#1\dagger\,\alpha}$
$\omega_{1^-}^{\#2\dagger\,\alpha}$
$f_{1^-}^{\#1\dagger\,\alpha}$
$f_{1^-}^{\#2\dagger\,\alpha}$

Lagrangian density

$$
\begin{aligned}
&-\tfrac{1}{3}t_1\,\omega_{\iota}^{\alpha\prime}\,\omega_{\kappa\alpha}^{\kappa} - t_1\,\omega_{\iota}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\prime} + f^{\alpha\beta}\,\tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} - 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} + \tfrac{2}{3}r_2\,\partial^{\beta}\omega^{\theta\alpha}{}_{\kappa}\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa} - \tfrac{1}{3}r_2\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\,\partial_{\kappa}\omega^{\alpha\beta\theta} - \\
&\tfrac{2}{3}r_2\,\partial_{\theta}\omega_{\alpha\beta}{}^{\kappa}\,\partial_{\kappa}\omega^{\theta\alpha\beta} + 2\,r_3\,\partial_{\alpha}\omega_{\lambda}{}^{\theta}{}_{\theta}\,\partial_{\kappa}\omega^{\theta\lambda\kappa} - r_5\,\partial_{\alpha}\omega_{\lambda}{}^{\theta}{}_{\theta}\,\partial_{\kappa}\omega^{\theta\lambda\kappa} - \\
&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} - 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} + 4\,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} - \\
&\tfrac{1}{2}t_1\,\partial^{\alpha}f_{\theta\kappa}\,\partial^{\kappa}f_{\alpha}{}^{\theta} - \tfrac{1}{2}t_1\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}{}^{\theta} - \tfrac{1}{2}t_1\,\partial^{\alpha}f_{\theta\kappa}\,\partial^{\kappa}f_{\alpha}{}^{\theta} + \tfrac{1}{2}t_1\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}{}^{\theta} + \\
&\tfrac{1}{3}t_1\,\omega_{\kappa\lambda}{}^{\lambda}\,\partial^{\kappa}f_{\iota}{}^{\alpha} + \tfrac{2}{3}t_1\,\partial^{\alpha}f_{\kappa\alpha}\,\partial^{\kappa}f_{\iota}{}^{\theta} - \tfrac{1}{3}t_1\,\partial_{\kappa}f_{\theta}{}^{\lambda}\,\partial^{\kappa}f_{\lambda}{}^{\theta} + \\
&\tfrac{1}{3}t_1\,\omega_{\iota\alpha}{}^{\alpha}\,\partial^{\kappa}f^{\prime}{}_{\kappa}{}^{\lambda} - \tfrac{1}{3}t_1\,\omega_{\iota\lambda}{}^{\lambda}\,\partial^{\kappa}f^{\prime}{}_{\kappa}{}^{\alpha} + \tfrac{1}{2}t_1\,\partial^{\alpha}f_{\lambda\kappa}\,\partial^{\kappa}f_{\alpha}{}^{\lambda} + \tfrac{1}{3}r_2\,\partial_{\kappa}\omega^{\alpha\beta\theta}\,\partial^{\kappa}\omega_{\alpha\beta\theta} - \\
&\tfrac{1}{2}t_1\,\partial_{\kappa}f^{\lambda}{}_{\theta}\,\partial^{\kappa}f_{\lambda}{}^{\theta} - \tfrac{1}{3}t_1\,\partial^{\alpha}f_{\lambda}{}^{\lambda}\,\partial^{\kappa}f_{\alpha\kappa} + \tfrac{1}{3}r_2\,\partial_{\kappa}\omega^{\theta\alpha\beta}\,\partial^{\kappa}\omega_{\alpha\beta\theta} - \\
&\tfrac{2}{3}r_2\,\partial^{\beta}\omega_{\iota}{}^{\alpha\lambda}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} + \tfrac{2}{3}r_2\,\partial^{\beta}\omega_{\iota}{}^{\lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} - 4\,r_3\,\partial^{\beta}\omega_{\iota}{}^{\lambda\alpha}\,\partial_{\lambda}\omega_{\alpha\beta}{}^{\prime} - \\
&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} + 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}
\end{aligned}
$$



Massive particle	
Pole residue:	$-\frac{1}{r_2} > 0$
Polarisations:	1
Square mass:	$\frac{t_1}{r_2} > 0$
Spin:	0
Parity:	Odd



Quadratic pole	
Pole residue:	$-\frac{1}{(2r_3+r_5)t_1^2} > 0$
Polarisations:	2

$r_2 < 0 \;\&\&\; r_5 < -2\,r_3 \;\&\&\; t_1 < 0$