	$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$\omega_{1^+}^{\#1}{}^{\dagger\alpha\beta}$	$\frac{1}{6}(6k^2 r_5 + t_1 + 4t_2)$	$-\frac{t_1 - 2t_2}{3\sqrt{2}}$	$-\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2}{}^{\dagger\alpha\beta}$	$-\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{t_1+t_2}{3}$	$\frac{1}{3}ik(t_1+t_2)$	0	0	0	0
$f_{1^+}^{\#1}{}^{\dagger\alpha\beta}$	$\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	$-\frac{1}{3}ik(t_1+t_2)$	$\frac{1}{3}k^2(t_1+t_2)$	0	0	0	0
$\omega_{1^-}^{\#1}{}^{\dagger\alpha}$	0	0	0	$k^2 r_5 - \frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	ikt_1
$\omega_{1^-}^{\#2}{}^{\dagger\alpha}$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$f_{1^-}^{\#1}{}^{\dagger\alpha}$	0	0	0	0	0	0	0
$f_{1^-}^{\#2}{}^{\dagger\alpha}$	0	0	0	$-ikt_1$	0	0	0

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

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

	$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}^{\dagger\alpha\beta}$	$\frac{2(t_1+t_2)}{3t_1 t_2+2k^2 r_5 (t_1+t_2)}$	$\frac{\sqrt{2}\,(t_1-2t_2)}{(1+k^2)(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	$\frac{i\sqrt{2}\,k(t_1-2t_2)}{(1+k^2)(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	0	0	0	0
$\sigma_{1^+}^{\#2}{}^{\dagger\alpha\beta}$	$\frac{\sqrt{2}\,(t_1-2t_2)}{(1+k^2)(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	$\frac{6k^2 r_5+t_1+4t_2}{(1+k^2)^2(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	$\frac{ik(6k^2 r_5+t_1+4t_2)}{(1+k^2)^2(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	0	0	0	0
$\tau_{1^+}^{\#1}{}^{\dagger\alpha\beta}$	$\frac{i\sqrt{2}\,k(t_1-2t_2)}{(1+k^2)(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	$\frac{ik(6k^2 r_5+t_1+4t_2)}{(1+k^2)^2(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	$\frac{k^2(6k^2 r_5+t_1+4t_2)}{(1+k^2)^2(3t_1 t_2+2k^2 r_5 (t_1+t_2))}$	0	0	0	0
$\sigma_{1^-}^{\#1}{}^{\dagger\alpha}$	0	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2 t_1}$	0	$-\frac{2ik}{t_1+2k^2 t_1}$
$\sigma_{1^-}^{\#2}{}^{\dagger\alpha}$	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2 t_1}$	$\frac{-2k^2 r_5+t_1}{(t_1+2k^2 t_1)^2}$	$-\frac{i\sqrt{2}\,k(2k^2 r_5-t_1)}{(t_1+2k^2 t_1)^2}$	$\frac{i\sqrt{2}\,k(2k^2 r_5-t_1)}{(t_1+2k^2 t_1)^2}$
$\tau_{1^-}^{\#1}{}^{\dagger\alpha}$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}^{\dagger\alpha}$	0	0	0	$\frac{2ik}{t_1+2k^2 t_1}$	$\frac{i\sqrt{2}\,k(2k^2 r_5-t_1)}{(t_1+2k^2 t_1)^2}$	0	$\frac{-4k^4 r_5+2k^2 t_1}{(t_1+2k^2 t_1)^2}$

Lagrangian density

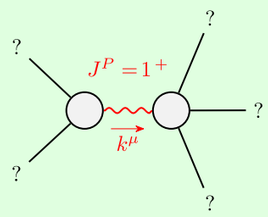
$$
\begin{aligned}
&-t_1\,\omega_{\ \ I}^{\alpha\prime}\,\omega_{\kappa\alpha}^{\ \ \kappa} - \tfrac{1}{3}t_1\,\omega_{\ \ I}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime} + \tfrac{2}{3}t_2\,\omega_{\ \ I}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime} + \tfrac{1}{3}t_1\,\omega_{\ \ I}^{\kappa\lambda}\,\omega_{\kappa\lambda}^{\ \ \prime} + \\
&\tfrac{1}{3}t_2\,\omega_{\kappa\lambda}^{\ \ \prime}\,\omega^{\kappa\lambda}{}_{I} + f^{\alpha\beta}\,\tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} - r_5\,\partial_I\omega^{\kappa\lambda}{}_{\kappa}\,\partial^I\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^{\alpha\beta\theta} - \\
&r_5\,\partial_\alpha\omega_{\lambda\ \theta}^{\ \ \alpha}\,\partial_\kappa\omega^{\theta\kappa\lambda} + r_5\,\partial_\theta\omega_{\lambda\ \alpha}^{\ \ \alpha}\,\partial_\kappa\omega^{\kappa\lambda\theta} - r_5\,\partial_\alpha\omega_{\lambda\ \theta}^{\ \ \alpha}\,\partial_\kappa\omega^{\kappa\lambda\theta} + \\
&2\,r_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{1}{6}t_2\,\partial^\alpha f_{\theta\kappa}\,\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_{\kappa\alpha} + \tfrac{1}{6}t_2\,\partial^\alpha f^{\kappa\lambda}\,\partial^\kappa f_{\kappa\alpha} + t_1\,\omega_{\kappa\alpha}^{\ \ \alpha}\,\partial^\kappa f^{\prime}{}_{I} + \\
&t_1\,\omega_{\kappa\lambda}^{\ \ \lambda}\,\partial^\kappa f^{\prime}{}_{I} + 2\,t_1\,\partial^\alpha f_{\kappa\alpha}\,\partial^\kappa f^{\prime}{}_{I} - t_1\,\partial_\kappa f^{\kappa\lambda}\,\partial^\kappa f^{\prime}{}_{I} + \tfrac{1}{3}t_1\,\omega_{I\theta\kappa}\,\partial^\kappa f^{I\theta} - \\
&\tfrac{1}{3}t_2\,\omega_{I\theta\kappa}\,\partial^\kappa f^{I\theta} + \tfrac{4}{3}t_1\,\omega_{I\kappa\theta}\,\partial^\kappa f^{I\theta} - \tfrac{2}{3}t_2\,\omega_{I\kappa\theta}\,\partial^\kappa f^{I\theta} - \tfrac{1}{3}t_1\,\omega_{I\theta\kappa}\,\partial^\kappa f^{I\theta} - \\
&\tfrac{1}{3}t_2\,\omega_{\theta I\kappa}\,\partial^\kappa f^{I\theta} + \tfrac{2}{3}t_1\,\omega_{\theta\kappa I}\,\partial^\kappa f^{I\theta} + \tfrac{2}{3}t_2\,\omega_{\theta\kappa I}\,\partial^\kappa f^{I\theta} - t_1\,\omega_{I\alpha}^{\ \ \alpha}\,\partial^\kappa f^{\prime}{}_{\kappa} - \\
&t_1\,\omega_{I\lambda}^{\ \ \lambda}\,\partial^\kappa f^{\prime}{}_{\kappa} + \tfrac{1}{3}t_1\,\partial^\alpha f^{\lambda}{}_{\kappa}\,\partial^\kappa f_{\lambda\alpha} - \tfrac{1}{6}t_2\,\partial^\alpha f^{\lambda}{}_{\kappa}\,\partial^\kappa f_{\lambda\alpha} + \tfrac{1}{3}t_1\,\partial_\kappa f^{\lambda}{}_{\theta}\,\partial^\kappa f_{\ \ \lambda}^{\theta} - \\
&\tfrac{1}{6}t_2\,\partial_\kappa f^{\lambda}{}_{\theta}\,\partial^\kappa f_{\ \ \lambda}^{\theta} + \tfrac{2}{3}t_1\,\partial_\kappa f^{\lambda}{}_{\theta}\,\partial^\kappa f_{\ \ \lambda}^{\theta} + \tfrac{1}{6}t_2\,\partial_\kappa f^{\lambda}{}_{\theta}\,\partial^\kappa f_{\ \ \lambda}^{\theta} - t_1\,\partial^\alpha f^{\lambda}{}_{\kappa}\,\partial^\kappa f_{\lambda\kappa} + \\
&\tfrac{1}{3}r_2\,\partial_\kappa\omega^{\alpha\beta\theta}\,\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_2\,\partial^\beta\omega_{\ \ I}^{\alpha\lambda}\,\partial_\lambda\omega_{\alpha\beta}^{\ \ \prime} + \\
&\tfrac{2}{3}r_2\,\partial^\beta\omega_{\ \ I}^{\lambda\alpha}\,\partial_\lambda\omega_{\alpha\beta}^{\ \ \prime} + r_5\,\partial_\alpha\omega_{\lambda\ \theta}^{\ \ \alpha}\,\partial^\lambda\omega^{\theta\kappa}{}_{\kappa} - r_5\,\partial_\theta\omega_{\lambda\ \alpha}^{\ \ \alpha}\,\partial^\lambda\omega^{\theta\kappa}{}_{\kappa}
\end{aligned}
$$

Source constraints

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

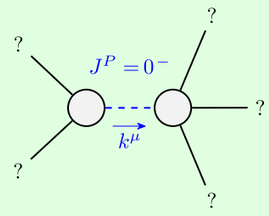
	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1}{}^{\dagger}$	$-\frac{1}{(1+2k^2)^2 t_1}$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_1}$	0	0
$\tau_{0^+}^{\#1}{}^{\dagger}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_1}$	$-\frac{2k^2}{(1+2k^2)^2 t_1}$	0	0
$\tau_{0^+}^{\#2}{}^{\dagger}$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

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



Massive particle

Pole residue:	$\frac{-3t_1 t_2 (t_1+t_2)+3r_5 (t_1{}^2+2t_2{}^2)}{r_5 (t_1+t_2)(-3t_1 t_2+2r_5 (t_1+t_2))} > 0$
Polarisations:	3
Square mass:	$-\frac{3t_1 t_2}{2r_5 t_1+2r_5 t_2} > 0$
Spin:	1
Parity:	Even



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

$r_2 < 0 \;\&\&\; r_5 > 0 \;\&\&\; t_1 < 0 \;\&\&\; t_2 > -t_1$