

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

$\omega_{1^+}^{\#1} \dagger \alpha\beta$	$\omega_{1^+}^{\#2} \dagger \alpha\beta$	$f_{1^+}^{\#1} \dagger \alpha\beta$	$\omega_{1^+}^{\#1} \dagger \alpha$	$\omega_{1^+}^{\#2} \dagger \alpha$	$f_{1^+}^{\#1} \dagger \alpha$	$f_{1^+}^{\#2} \dagger \alpha$
$k^2(2r_3+r_5) + \frac{2t_2}{3}$	$\frac{\sqrt{2}t_2}{3}$	$\frac{1}{3}i\sqrt{2}kt_2$	0	0	0	0
$-\frac{1}{3}i\sqrt{2}kt_2$	$\frac{t_2}{3}$	$\frac{ikt_2}{3}$	0	0	0	0
0	0	$\frac{k^2t_2}{3}$	$\frac{1}{2}k^2(r_3+2r_5)$	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Source constraints	#
SO(3) irreps	
$\sigma_{0^+}^{\#1} == 0$	1
$\tau_{0^+}^{\#1} == 0$	1
$\tau_{0^+}^{\#2} == 0$	1
$\tau_{1^+}^{\#2\alpha} == 0$	3
$\tau_{1^+}^{\#1\alpha} == 0$	3
$\sigma_{1^+}^{\#2\alpha} == 0$	3
$\tau_{1^+}^{\#1\alpha\beta} + ik\sigma_{1^+}^{\#2\alpha\beta} == 0$	3
$\sigma_{2^+}^{\#1\alpha\beta\chi} == 0$	5
$\tau_{2^+}^{\#1\alpha\beta} == 0$	5
Total #:	25

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

Lagrangian density
$\begin{aligned} &\frac{2}{3}t_2\omega_{\lambda'}^{\kappa\lambda}\omega_{\kappa\lambda'}^{\alpha} + \frac{1}{3}t_2\omega_{\kappa\lambda'}^{\alpha}\omega_{\kappa\lambda}^{\kappa\lambda} - \frac{1}{2}r_3\partial_{\lambda'}\omega_{\kappa}^{\kappa\lambda}\partial^{\alpha}\omega_{\lambda\alpha} - r_5\partial_{\lambda'}\omega_{\kappa}^{\kappa\lambda}\partial^{\alpha}\omega_{\lambda\alpha} + \\ &\frac{1}{2}r_3\partial_{\alpha}\omega_{\lambda\theta}^{\alpha}\partial_{\kappa}\omega^{\theta\kappa\lambda} - r_5\partial_{\alpha}\omega_{\lambda\theta}^{\alpha}\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\theta}^{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta} - r_5\partial_{\alpha}\omega_{\lambda\theta}^{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta} + \\ &r_3\partial_{\theta}\omega_{\lambda\alpha}^{\alpha}\partial_{\kappa}\omega^{\kappa\lambda\theta} + 2r_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_{\kappa}^{\lambda}\partial^{\kappa}f_{\alpha\lambda} + \frac{1}{3}t_2\omega_{\lambda\theta\kappa}\partial^{\kappa}f^{\lambda\theta} - \frac{2}{3}t_2\omega_{\lambda\kappa\theta}\partial^{\kappa}f^{\lambda\theta} - \\ &\frac{1}{3}t_2\omega_{\theta\lambda\kappa}\partial^{\kappa}f^{\lambda\theta} + \frac{2}{3}t_2\omega_{\theta\kappa\lambda}\partial^{\kappa}f^{\lambda\theta} - \frac{1}{6}t_2\partial^{\alpha}f_{\kappa}^{\lambda}\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_{\theta}^{\lambda}\partial^{\kappa}f_{\lambda}^{\theta} - 4r_3\partial^{\beta}\omega_{\lambda'}^{\lambda\alpha}\partial_{\lambda}\omega_{\alpha\beta}^{\alpha} - \frac{1}{2}r_3\partial_{\alpha}\omega_{\lambda\theta}^{\alpha}\partial^{\lambda}\omega^{\theta\kappa}_{\kappa} + \\ &r_5\partial_{\alpha}\omega_{\lambda\theta}^{\alpha}\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} \end{aligned}$
Added source term:
$f^{\alpha\beta}\tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\sigma_{\alpha\beta\chi}$

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

$\omega_{0^+}^{\#1} \dagger$	$f_{0^+}^{\#1} \dagger$	$f_{0^+}^{\#2} \dagger$	$\omega_{0^+}^{\#1} \dagger$
0	0	0	0
0	0	0	0
0	0	0	0
t_2	0	0	0

$\sigma_{0^+}^{\#1} \dagger$	$\tau_{0^+}^{\#1} \dagger$	$\tau_{0^+}^{\#2} \dagger$	$\sigma_{0^+}^{\#1} \dagger$
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	$\frac{1}{t_2}$

Diagram description: A Feynman diagram with two light purple circular vertices connected by a thick green horizontal arrow pointing from left to right. The arrow is labeled with a green k^μ . Each vertex has three external lines extending outwards, all labeled with a black question mark. The left vertex has lines extending up-left, down-left, and down-right. The right vertex has lines extending up-right, down-right, and straight-right.

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

Unitarity conditions
$r_3 < 0 \&\& (r_5 < -\frac{r_3}{2} \parallel r_5 > -2r_3) \parallel r_3 > 0 \&\& -2r_3 < r_5 < -\frac{r_3}{2}$
(No massive particles)