

	$\omega_{1^+ \alpha \beta}^{\#1}$	$\omega_{1^+ \alpha \beta}^{\#2}$	$f_{1^+ \alpha \beta}^{\#1}$	$\omega_{1^- \alpha}^{\#1}$	$\omega_{1^- \alpha}^{\#2}$	$f_{1^- \alpha}^{\#1}$	$f_{1^- \alpha}^{\#2}$
$\omega_{1^+}^{\#1} \dagger^{\alpha \beta}$	$k^2 r_5 + \frac{t_1}{6}$	$-\frac{t_1}{3 \sqrt{2}}$	$-\frac{i k t_1}{3 \sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2} \dagger^{\alpha \beta}$	$-\frac{t_1}{3 \sqrt{2}}$	$\frac{t_1}{3}$	$\frac{i k t_1}{3}$	0	0	0	0
$f_{1^+}^{\#1} \dagger^{\alpha \beta}$	$\frac{i k t_1}{3 \sqrt{2}}$	$-\frac{1}{3} i k t_1$	$\frac{k^2 t_1}{3}$	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	$i k t_1$
$\omega_{1^-}^{\#2} \dagger^\alpha$	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	$-i k t_1$	0	0	0

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

SO(3) irreps	#
$\sigma_0^{\#1} == 0$	1
$\tau_0^{\#2} == 0$	1
$\tau_0^{\#1} - 2 i k \sigma_0^{\#1} == 0$	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 #:	17

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

Lagrangian density

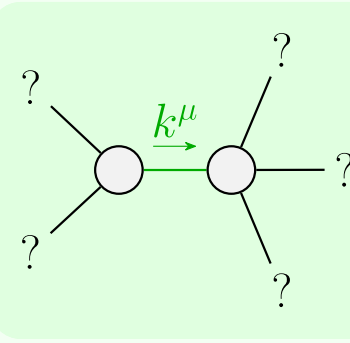
$$\begin{aligned}
 & -t_1 \omega_{\lambda'}^{\alpha'} \omega_{\kappa \alpha}^{\kappa} - \frac{1}{3} t_1 \omega_{\lambda'}^{\kappa \lambda} \omega_{\kappa \lambda}^{\lambda'} + \frac{1}{3} t_1 \omega_{\kappa \lambda}^{\lambda'} \omega_{\lambda'}^{\kappa \lambda} - \\
 & r_5 \partial_{\lambda} \omega_{\lambda}^{\kappa \lambda} \partial_{\kappa} \omega_{\lambda}^{\alpha} - r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega^{\theta \kappa \lambda} + r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega^{\kappa \lambda \theta} - \frac{1}{3} t_1 \partial^{\alpha} f_{\theta \kappa} \partial^{\kappa} f_{\alpha}^{\theta} - \\
 & r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\theta} \omega^{\kappa \lambda \theta} + 2 r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega^{\kappa \lambda \theta} - \frac{1}{3} t_1 \partial^{\alpha} f_{\theta \kappa} \partial^{\kappa} f_{\alpha}^{\theta} - \\
 & \frac{2}{3} t_1 \partial^{\alpha} f_{\kappa \theta} \partial^{\kappa} f_{\alpha}^{\theta} - \frac{1}{3} t_1 \partial^{\alpha} f_{\lambda}^{\kappa} \partial^{\kappa} f_{\alpha}^{\lambda} \partial^{\alpha} f_{\alpha \lambda} + t_1 \omega_{\kappa \alpha}^{\alpha} \partial^{\kappa} f_{\lambda'}^{\lambda'} + t_1 \omega_{\kappa \lambda}^{\lambda} \partial^{\kappa} f_{\lambda'}^{\lambda'} + \\
 & 2 t_1 \partial^{\alpha} f_{\kappa \alpha} \partial^{\kappa} f_{\lambda'}^{\lambda'} - t_1 \partial_{\kappa} f_{\lambda}^{\lambda} \partial^{\kappa} f_{\lambda'}^{\lambda'} + \frac{1}{3} t_1 \omega_{\lambda \theta \kappa} \partial^{\kappa} f^{\lambda \theta} + \frac{4}{3} t_1 \omega_{\lambda \kappa \theta} \partial^{\kappa} f^{\lambda \theta} - \\
 & \frac{1}{3} t_1 \omega_{\theta \lambda \kappa} \partial^{\kappa} f^{\lambda \theta} + \frac{2}{3} t_1 \omega_{\theta \kappa \lambda} \partial^{\kappa} f^{\lambda \theta} - t_1 \omega_{\lambda \alpha}^{\alpha} \partial^{\kappa} f_{\kappa}^{\lambda'} - t_1 \omega_{\lambda}^{\lambda} \partial^{\kappa} f_{\kappa}^{\lambda'} + \\
 & \frac{1}{3} t_1 \partial^{\alpha} f_{\lambda}^{\kappa} \partial^{\kappa} f_{\lambda \alpha} + \frac{1}{3} t_1 \partial_{\kappa} f_{\theta}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} + \frac{2}{3} t_1 \partial_{\kappa} f_{\lambda}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} - \\
 & t_1 \partial^{\alpha} f_{\lambda}^{\alpha} \partial^{\kappa} f_{\lambda \kappa} + r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega^{\theta \kappa} - r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega^{\theta \kappa} -
 \end{aligned}$$

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

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

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

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



Quadratic pole	
Pole residue:	$\frac{1}{r_5 t_1^2 p^2} > 0$
Polarisations:	2

Unitarity conditions

$r_5 > 0 \ \&\& \ t_1 < 0 \ || \ t_1 > 0$

(No massive particles)