

	$\sigma_{1^+ \alpha\beta}^{\#1}$	$\sigma_{1^+ \alpha\beta}^{\#2}$	$\tau_{1^+ \alpha\beta}^{\#1}$	$\sigma_{1^- \alpha}^{\#1}$	$\sigma_{1^- \alpha}^{\#2}$	$\tau_{1^- \alpha}^{\#1}$	$\tau_{1^- \alpha}^{\#2}$
$\sigma_{1^+ \dagger}^{\#1 \alpha\beta}$	$\frac{1}{k^2 (2r_1+r_5)}$	$\frac{1}{\sqrt{2} (k^2+k^4) (2r_1+r_5)}$	$\frac{i}{\sqrt{2} (k+k^3) (2r_1+r_5)}$	0	0	0	0
$\sigma_{1^+ \dagger}^{\#2 \alpha\beta}$	$\frac{1}{\sqrt{2} (k^2+k^4) (2r_1+r_5)}$	$\frac{6k^2 (2r_1+r_5)+t_1}{2 (k+k^3)^2 (2r_1+r_5) t_1}$	$\frac{i (6k^2 (2r_1+r_5)+t_1)}{2 k (1+k^2)^2 (2r_1+r_5) t_1}$	0	0	0	0
$\tau_{1^+ \dagger}^{\#1 \alpha\beta}$	$-\frac{i}{\sqrt{2} (k+k^3) (2r_1+r_5)}$	$-\frac{i (6k^2 (2r_1+r_5)+t_1)}{2 k (1+k^2)^2 (2r_1+r_5) t_1}$	$\frac{6k^2 (2r_1+r_5)+t_1}{2 (1+k^2)^2 (2r_1+r_5) t_1}$	0	0	0	0
$\sigma_{1^- \dagger}^{\#1 \alpha}$	0	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2 t_1}$	0	$\frac{2ik}{t_1+2k^2 t_1}$
$\sigma_{1^- \dagger}^{\#2 \alpha}$	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2 t_1}$	$\frac{-2k^2 (r_1+r_5)+t_1}{(t_1+2k^2 t_1)^2}$	0	$-\frac{i\sqrt{2} k (2k^2 (r_1+r_5)-t_1)}{(t_1+2k^2 t_1)^2}$
$\tau_{1^- \dagger}^{\#1 \alpha}$	0	0	0	0	0	0	0
$\tau_{1^- \dagger}^{\#2 \alpha}$	0	0	0	$-\frac{2ik}{t_1+2k^2 t_1}$	$\frac{i\sqrt{2} k (2k^2 (r_1+r_5)-t_1)}{(t_1+2k^2 t_1)^2}$	0	$\frac{-4k^4 (r_1+r_5)+2k^2 t_1}{(t_1+2k^2 t_1)^2}$

Added source term:

$$f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$$

$$\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_{\kappa}^{\kappa\lambda} \partial^{\lambda} \omega_{\lambda}^{\alpha} - \\ & \frac{2}{3} r_1 \partial^{\beta} \omega_{\alpha}^{\alpha} \partial_{\theta} \omega_{\alpha\beta}^{\beta} - \frac{2}{3} r_1 \partial_{\theta} \omega_{\alpha\beta}^{\beta} \partial_{\kappa} \omega^{\alpha\beta\theta} + \frac{2}{3} r_1 \partial_{\theta} \omega_{\alpha\beta}^{\beta} \partial_{\kappa} \omega^{\alpha\beta\theta} - \\ & r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\theta} \omega_{\theta\kappa\lambda}^{\kappa\lambda} + r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega_{\theta}^{\theta\kappa\lambda} - r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\theta} \omega_{\theta}^{\kappa\lambda\theta} + \\ & 2 r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega_{\alpha}^{\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_{\kappa}^{\kappa} \partial^{\kappa} f_{\alpha\lambda}^{\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}^{\kappa} \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}^{\lambda} \partial^{\kappa} f_{\kappa}^{\lambda} + \frac{1}{3} t_1 \partial^{\alpha} f_{\kappa}^{\kappa} \partial^{\kappa} f_{\lambda\alpha}^{\lambda} + \\ & \frac{1}{3} t_1 \partial_{\kappa} f_{\theta}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} + \frac{2}{3} t_1 \partial_{\kappa} f_{\theta}^{\lambda} \partial^{\kappa} f_{\lambda}^{\theta} - t_1 \partial^{\alpha} f_{\alpha}^{\lambda} \partial^{\kappa} f_{\lambda\kappa}^{\kappa} + \\ & \frac{2}{3} r_1 \partial_{\kappa} \omega^{\alpha\beta\theta} \partial^{\kappa} \omega_{\alpha\beta\theta} - \frac{2}{3} r_1 \partial_{\kappa} \omega^{\theta\alpha\beta} \partial^{\kappa} \omega_{\alpha\beta\theta} + \frac{2}{3} r_1 \partial^{\beta} \omega_{\lambda}^{\alpha\lambda} \partial_{\lambda} \omega_{\alpha\beta}^{\beta} - \\ & \frac{8}{3} r_1 \partial^{\beta} \omega_{\lambda}^{\lambda\alpha} \partial_{\lambda} \omega_{\alpha\beta}^{\beta} + r_5 \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega_{\theta\kappa}^{\theta\kappa} - r_5 \partial_{\theta} \omega_{\lambda}^{\alpha} \partial^{\lambda} \omega_{\kappa}^{\theta\kappa} \end{aligned}$$

Lagrangian density

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

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

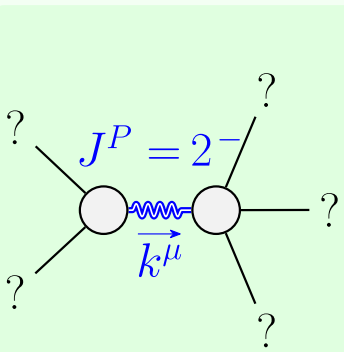
	$\omega_{0^+}^{\#1}$	$f_{0^+}^{\#1}$	$f_{0^+}^{\#2}$	$\omega_{0^-}^{\#1}$
$\omega_{0^+ \dagger}^{\#1}$	-t ₁	i√2 k t ₁	0	0
$f_{0^+ \dagger}^{\#1}$	-i√2 k t ₁	-2 k ² t ₁	0	0
$f_{0^+ \dagger}^{\#2}$	0	0	0	0
$\omega_{0^- \dagger}^{\#1}$	0	0	0	0

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

	$\omega_{1^+ \alpha\beta}^{\#1}$	$\omega_{1^+ \alpha\beta}^{\#2}$	$f_{1^+ \alpha\beta}^{\#1}$	$\omega_{1^- \alpha}^{\#1}$	$\omega_{1^- \alpha}^{\#2}$	$f_{1^- \alpha}^{\#1}$	$f_{1^- \alpha}^{\#2}$
$\omega_{1^+ \dagger}^{\#1 \alpha\beta}$	$k^2 (2r_1+r_5) + \frac{t_1}{6}$	$-\frac{t_1}{3\sqrt{2}}$	$-\frac{ikt_1}{3\sqrt{2}}$	0	0	0	0
$\omega_{1^+ \dagger}^{\#2 \alpha\beta}$	$-\frac{t_1}{3\sqrt{2}}$	$\frac{t_1}{3}$	$\frac{ikt_1}{3}$	0	0	0	0
$f_{1^+ \dagger}^{\#1 \alpha\beta}$	$\frac{ikt_1}{3\sqrt{2}}$	$-\frac{1}{3} i k t_1$	$\frac{k^2 t_1}{3}$	0	0	0	0
$\omega_{1^- \dagger}^{\#1 \alpha}$	0	0	0	$k^2 (r_1+r_5) - \frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	$ik t_1$
$\omega_{1^- \dagger}^{\#2 \alpha}$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$f_{1^- \dagger}^{\#1 \alpha}$	0	0	0	0	0	0	0
$f_{1^- \dagger}^{\#2 \alpha}$	0	0	0	$-i k t_1$	0	0	0

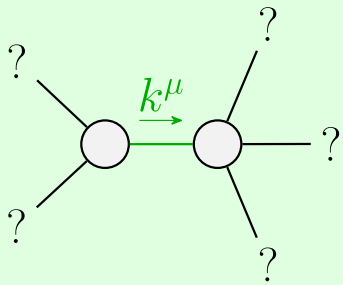
Total #:

Source constraints	#
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
	17



Massive particle

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



Quadratic pole

Pole residue:	$\frac{1}{(2r_1+r_5) t_1^2 p^2} > 0$
Polarisations:	2

Unitarity conditions

$$r_1 < 0 \ \&\& \ r_5 > -2 \, r_1 \ \&\& \ t_1 > 0$$