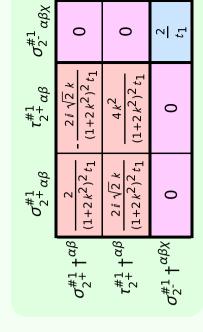
$\sigma_{1^-\alpha}^{\#1}$ $\sigma_{1^-\alpha}^{\#2}$ $\tau_{1^-\alpha}^{\#1}$ $\tau_{1^-\alpha}^{\#2}$	0 0 0	0 0 0	0 0	$\frac{\sqrt{2}}{t_1 + 2k^2t_1} \qquad 0 \qquad \frac{2ik}{t_1 + 2k^2t_1}$	$\frac{-2k^2r_5+t_1}{(t_1+2k^2t_1)^2}  0  -\frac{i\sqrt{2}k(2k^2r_5-t_1)}{(t_1+2k^2t_1)^2}$	0 0	$\frac{k^2 r_5 - t_1}{\langle t_1 \rangle^2}$ 0 $\frac{-4k^4 r_5 + 2k^2 t_1}{(t_1 + 2k^2 t_1)^2}$
$\sigma_{1^-\alpha}^{\#2}$	0 0 0	0 0 0	0 0	$\frac{\sqrt{2}}{t_1 + 2k^2t_1} \qquad 0$	$\frac{k^2 r_5 + t_1}{+2 k^2 t_1)^2}$ 0	0 0	$\frac{k^2 r_5 - t_1)}{(2t_1)^2}$ 0
	0 0	0 0	0	$\frac{\sqrt{2}}{t_1 + 2k^2t_1}$	$\frac{k^2 r_5 + t_1}{+2 k^2 t_1)^2}$	0	$\frac{k^2 r_5 - t_1}{(2t_1)^2}$
$\sigma_{1^-}^{\#1}$	0	0			-2 (t <sub>1</sub> -		$\frac{i\sqrt{2} k(2k^2 r_5 - t_1)}{(t_1 + 2k^2 t_1)^2}$
			0	0	$\frac{\sqrt{2}}{t_1 + 2k^2t_1}$	0	$-\frac{2ik}{t_1+2k^2t_1}$
$\tau_{1}^{\#1}\alpha\beta$ $i\sqrt{2}k(t_{1}-2t_{2})$	$\frac{1 \sqrt{2} \kappa(t_1 - 2t_2)}{(1 + k^2)(3t_1t_2 + 2k^2t_5(t_1 + t_2))}$	$\frac{ik(6k^2r_5+t_1+4t_2)}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{k^2 \left(6  k^2  r_5 + t_1 + 4  t_2\right)}{\left(1 + k^2\right)^2 \left(3  t_1  t_2 + 2  k^2  r_5 \left(t_1 + t_2\right)\right)}$	0	0	0	0
$\sigma_{1}^{\#2}\alpha\beta$	$\frac{\sqrt{2(t_1-2t_2)}}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{6k^2r_5+t_1+4t_2}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	$-\frac{ik(6k^2r_5+t_1+4t_2)}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	0	0	0	0
$\sigma_{1}^{\#1}\alpha\beta$	$\frac{2(t_1+t_2)}{3t_1t_2+2k^2r_5(t_1+t_2)}$	$+^{\alpha\beta} \frac{\sqrt{2} (t_1 - 2t_2)}{(1 + k^2) (3t_1 t_2 + 2k^2 r_5 (t_1 + t_2))}$	$+\alpha\beta \left  -\frac{i\sqrt{2}k(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))} \right $	0	0	0	0

$\omega_{+ \ \alpha \beta}^{*1} f_{-+ \ \alpha \beta}^{*1} f_{-+ \ \alpha \beta}^{*1} \omega_{-+ \ \alpha \beta}^{*1}$	0	0	$\frac{t_1}{2}$
$f_{2}^{\#1}$	$-\frac{ikt_1}{\sqrt{2}}$	$k^2 t_1$	0
$\omega_{2}^{*1}$		$\frac{i  k  t_1}{\sqrt{2}}$	0
	$\omega_2^{\#1} +^{lphaeta}$	$f_{2^+}^{\#1} \dagger^{\alpha\beta}$	$\omega_{2}^{\#1} +^{lphaeta\chi}$

$\sigma_0^{\#}$	0	0	0	$\frac{1}{t_2}$	
$\tau_0^{\#2}$	0	0 0		0	
${f r}_0^{\#1}$	$\frac{i\sqrt{2}k}{(1+2k^2)^2t_1}$	$-\frac{2k^2}{(1+2k^2)^2t_1}$	0	0	
$\sigma_{0}^{\#1}$	$-\frac{1}{(1+2k^2)^2t_1}$	$-\frac{i\sqrt{2}k}{(1+2k^2)^2t_1}$	0	0	
	$\sigma_{0}^{\#1}$ †	$\tau_{0}^{\#1}$ †	$\tau_{0}^{\#2}$ †	$\sigma_{0}^{\#1}\dagger$	

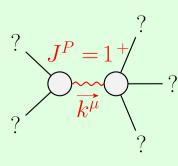
	#	1	1	3	3	3	5	16
Source constraints	SO(3) irreps	$t_{0+}^{\#2} == 0$	$t_{0+}^{\#1} - 2  \bar{l}  k  \sigma_{0+}^{\#1} == 0$	$t_{1}^{\#2}{}^{\alpha} + 2ik \sigma_{1}^{\#2}{}^{\alpha} == 0$	$t_{1}^{\#1}{}^{\alpha} == 0$	$\tau_1^{\#1}{}^{\alpha\beta} + ik \ \sigma_1^{\#2}{}^{\alpha\beta} == 0$	$\tau_{2+}^{\#1}^{\alpha\beta} - 2ik \sigma_{2+}^{\#1}^{\alpha\beta} = 0$	Total #:



$\omega_{0}^{\#1}$	0	0	0	<i>t</i> <sub>2</sub>
$f_0^{\#2}$	0	0	0	0
$f_0^{\#1}$	$i\sqrt{2}\ kt_1$	$-2 k^2 t_1$	0	0
$\omega_{0}^{\#1}$	-¢ <sub>1</sub>	$-i\sqrt{2} \ k t_1$	0	0
	$\omega_{0}^{\#1}\dagger$	$f_{0}^{\#1}$ †	$f_{0}^{#2} \uparrow$	$\omega_{0}^{\#1} \uparrow$

## Lagrangian density

$$-t_{1} \omega_{i}^{\alpha i} \omega_{\kappa \alpha}^{\kappa} - \frac{1}{3} t_{1} \omega_{i}^{\kappa \lambda} \omega_{\kappa \lambda}^{i} + \frac{2}{3} t_{2} \omega_{i}^{\kappa \lambda} \omega_{\kappa \lambda}^{i} + \frac{1}{3} t_{1} \omega_{\kappa \lambda}^{i} \omega_{\kappa \lambda}^{\kappa \lambda} + \frac{1}{3} t_{1} \omega_{\kappa \lambda}^{i} \omega_{\kappa \lambda}^{\kappa \lambda} + \frac{1}{3} t_{2} \omega_{\kappa \lambda}^{i} \omega_{\kappa \lambda}^{\kappa \lambda} - r_{5} \partial_{i} \omega_{\kappa \lambda}^{\kappa \lambda} \partial_{i} \omega_{\lambda}^{\alpha} \partial_{\alpha} - r_{5} \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega^{\theta \kappa \lambda} + \frac{1}{5} t_{2} \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\kappa} \omega^{\kappa \lambda \theta} - \frac{1}{5} t_{2} \partial_{\alpha} \omega_{\lambda}^{\alpha} \partial_{\kappa} \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}^{\alpha} f_{\theta \kappa} \partial_{\kappa}^{\kappa} f_{\alpha}^{\theta} - \frac{2}{3} t_{1} \partial_{\alpha}^{\alpha} f_{\kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{\theta} - \frac{1}{3} t_{1} \partial_{\alpha}^{\alpha} f_{\kappa \lambda}^{\kappa} \partial_{\kappa}^{\kappa} f_{\alpha \lambda} + \frac{1}{6} t_{2} \partial_{\alpha}^{\alpha} f_{\kappa} \partial_{\kappa}^{\kappa} f_{\alpha \lambda}^{\kappa} + t_{1} \omega_{\kappa \lambda}^{\alpha} \partial_{\kappa}^{\kappa} f_{\alpha \lambda}^{i} + 2 t_{1} \partial_{\alpha}^{\alpha} f_{\kappa \alpha} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} - t_{1} \partial_{\kappa}^{\kappa} f_{\lambda}^{\lambda} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{1} \omega_{i \theta \kappa} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{2} \omega_{i \theta \kappa} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{4}{3} t_{1} \omega_{i \kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} - \frac{2}{3} t_{2} \omega_{i \kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{2}{3} t_{2} \omega_{i \kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{2} \omega_{i \kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{2} \omega_{i \kappa \theta} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{2}{3} t_{2} \omega_{i \kappa} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{2} \partial_{\kappa} f_{\alpha}^{\lambda} \partial_{\kappa}^{\kappa} f_{\alpha}^{i} + \frac{1}{3} t_{2} \partial_{\kappa} f_{\alpha}^{$$



•	Massive particle					
	Pole residue:	$\frac{-3t_1t_2(t_1+t_2)+3r_5(t_1^2+2t_2^2)}{r_5(t_1+t_2)(-3t_1t_2+2r_5(t_1+t_2))} > 0$				
<u> </u>	Polarisations:	3				
; <del>-</del>	Square mass:	$-\frac{3t_1t_2}{2r_5t_1+2r_5t_2} > 0$				
)	Spin:	1				
	Parity:	Even				

## **Unitarity conditions**