Lagrangian density

$$-t_1\,\omega_\iota{}^{\alpha\iota}\,\omega_{\kappa\alpha}{}^\kappa-\tfrac13 t_1\,\omega_\iota{}^{\kappa\lambda}\,\omega_{\kappa\lambda}{}^\iota+\tfrac23 t_2\,\omega_\iota{}^{\kappa\lambda}\,\omega_{\kappa\lambda}{}^\iota+\tfrac13 t_1\,\omega_{\kappa\lambda}{}^\iota\,\omega^{\kappa\lambda}{}_\iota+$$
$$\tfrac13 t_2\,\omega_{\kappa\lambda}{}^\iota\,\omega^{\kappa\lambda}{}_\iota+f^{\alpha\beta}\,\tau_{\alpha\beta}+\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}-r_5\,\partial_\iota\omega^{\kappa\lambda}{}_\kappa\,\partial^\iota\omega_\lambda{}^\alpha{}_\alpha-\tfrac23 r_1\,\partial^\beta\omega^{\theta\alpha}{}_\kappa\,\partial_\theta\omega_{\alpha\beta}{}^\kappa-$$
$$\tfrac23 r_1\,\partial_\theta\omega_{\alpha\beta}{}^\kappa\,\partial_\kappa\omega^{\alpha\beta\theta}+\tfrac23 r_1\,\partial_\theta\omega_{\alpha\beta}{}^\kappa\,\partial_\kappa\omega^{\theta\alpha\beta}-r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\theta\,\partial_\kappa\omega^{\theta\kappa\lambda}+$$
$$r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial_\kappa\omega^{\theta\kappa\lambda}-r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\alpha\,\partial_\kappa\omega^{\kappa\lambda\theta}+2r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial_\kappa\omega^{\kappa\lambda\theta}-\tfrac13 t_1\,\partial^\alpha f_{\theta\kappa}\,\partial^\kappa f_\alpha{}^\theta+$$
$$\tfrac16 t_2\,\partial^\alpha f_{\theta\kappa}\,\partial^\kappa f_\alpha{}^\theta-\tfrac23 t_1\,\partial^\alpha f_{\kappa\theta}\,\partial^\kappa f_\alpha{}^\theta-\tfrac16 t_2\,\partial^\alpha f_{\kappa\theta}\,\partial^\kappa f_\alpha{}^\theta-\tfrac13 t_1\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\alpha\lambda}+$$
$$\tfrac16 t_2\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\alpha\lambda}+t_1\,\omega_{\kappa\alpha}{}^\alpha\,\partial^\kappa f^\iota{}_\iota+t_1\,\omega_{\kappa\lambda}{}^\lambda\,\partial^\kappa f^\iota{}_\iota+2t_1\,\partial^\alpha f_{\kappa\alpha}\,\partial^\kappa f^\iota{}_\iota-$$
$$t_1\,\partial_\kappa f^\lambda{}_\lambda\,\partial^\kappa f^\iota{}_\iota+\tfrac13 t_1\,\omega_{\iota\theta\kappa}\,\partial^\kappa f^{\iota\theta}+\tfrac13 t_2\,\omega_{\iota\theta\kappa}\,\partial^\kappa f^{\iota\theta}+\tfrac43 t_1\,\omega_{\iota\kappa\theta}\,\partial^\kappa f^{\iota\theta}-$$
$$\tfrac23 t_2\,\omega_{\iota\kappa\theta}\,\partial^\kappa f^{\iota\theta}-\tfrac13 t_1\,\omega_{\theta\iota\kappa}\,\partial^\kappa f^{\iota\theta}-\tfrac13 t_2\,\omega_{\theta\iota\kappa}\,\partial^\kappa f^{\iota\theta}+\tfrac23 t_1\,\omega_{\theta\kappa\iota}\,\partial^\kappa f^{\iota\theta}+$$
$$\tfrac23 t_2\,\omega_{\theta\kappa\iota}\,\partial^\kappa f^{\iota\theta}-t_1\,\omega_{\iota\alpha}{}^\alpha\,\partial^\kappa f^\iota{}_\kappa-t_1\,\omega_{\iota\lambda}{}^\lambda\,\partial^\kappa f^\iota{}_\kappa+\tfrac13 t_1\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\lambda\alpha}-$$
$$\tfrac16 t_2\,\partial^\alpha f^\lambda{}_\kappa\,\partial^\kappa f_{\lambda\alpha}+\tfrac13 t_1\,\partial_\kappa f^\lambda{}_\theta\,\partial^\kappa f_\lambda{}^\theta-\tfrac16 t_2\,\partial_\kappa f^\lambda{}_\theta\,\partial^\kappa f_\lambda{}^\theta+\tfrac23 t_1\,\partial_\kappa f^\lambda{}_\theta\,\partial^\kappa f_\lambda{}^\theta+$$
$$\tfrac16 t_2\,\partial_\kappa f^\lambda{}_\theta\,\partial^\kappa f_\lambda{}^\theta-t_1\,\partial^\alpha f^\lambda{}_\alpha\,\partial^\kappa f_{\lambda\kappa}+\tfrac23 r_1\,\partial_\kappa\omega^{\alpha\beta\theta}\,\partial^\kappa\omega_{\alpha\beta\theta}-\tfrac23 r_1\,\partial_\kappa\omega^{\theta\alpha\beta}\,\partial^\kappa\omega_{\alpha\beta\theta}+$$
$$\tfrac23 r_1\,\partial^\beta\omega_\iota{}^{\alpha\lambda}\,\partial_\lambda\omega_{\alpha\beta}{}^\iota-\tfrac83 r_1\,\partial^\beta\omega_\iota{}^{\lambda\alpha}\,\partial_\lambda\omega_{\alpha\beta}{}^\iota+r_5\,\partial_\alpha\omega_\lambda{}^\alpha{}_\theta\,\partial^\lambda\omega^{\theta\kappa}{}_\kappa-r_5\,\partial_\theta\omega_\lambda{}^\alpha{}_\alpha\,\partial^\lambda\omega^{\theta\kappa}{}_\kappa$$

Left table (1^+ / 1^- sector)

	$\sigma^{\#1\dagger}_{1^+\alpha\beta}$	$\sigma^{\#2\dagger}_{1^+\alpha\beta}$	$\tau^{\#1\dagger}_{1^+\alpha\beta}$	$\sigma^{\#1\dagger}_{1^-\alpha}$	$\sigma^{\#2\dagger}_{1^-\alpha}$	$\tau^{\#1\dagger}_{1^-\alpha}$	$\tau^{\#2\dagger}_{1^-\alpha}$
$\tau^{\#2}_{1^-\alpha}$	0	0	0	$\frac{2ik}{t_1+2k^2t_1}$	$-\frac{i\sqrt2\,k(2k^2(r_1+r_5)-t_1)}{(t_1+2k^2t_1)^2}$	0	$-\frac{4k^4(r_1+r_5)+2k^2t_1}{(t_1+2k^2t_1)^2}$
$\tau^{\#1}_{1^-\alpha}$	0	0	0	0	0	0	0
$\sigma^{\#2}_{1^-\alpha}$	0	0	0	$\frac{\sqrt2}{t_1+2k^2t_1}$	$-\frac{2k^2(r_1+r_5)+t_1}{(t_1+2k^2t_1)^2}$	0	$\frac{i\sqrt2\,k(2k^2(r_1+r_5)+t_1)}{(t_1+2k^2t_1)^2}$
$\sigma^{\#1}_{1^-\alpha}$	0	0	0	0	$\frac{\sqrt2}{t_1+2k^2t_1}$	0	$-\frac{2ik}{t_1+2k^2t_1}$
$\tau^{\#1}_{1^+\alpha\beta}$	$\frac{i\sqrt2\,k(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	$\frac{ik(6k^2(2r_1+r_5)+t_1+4t_2)}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	$\frac{k^2(6k^2(2r_1+r_5)+t_1+4t_2)}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	0	0	0	0
$\sigma^{\#2}_{1^+\alpha\beta}$	$\frac{\sqrt2(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	$\frac{6k^2(2r_1+r_5)+t_1+4t_2}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	$\frac{ik(6k^2(2r_1+r_5)+t_1+4t_2)}{(1+k^2)(3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2))}$	0	0	0	0
$\sigma^{\#1}_{1^+\alpha\beta}$	$\frac{2(t_1+t_2)}{3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2)}$	$\frac{\sqrt2(t_1-2t_2)}{3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2)}$	$-\frac{i\sqrt2\,k(t_1-2t_2)}{3t_1t_2+2k^2(2r_1+r_5)(t_1+t_2)}$	0	0	0	0

0^+ / 0^- scalar sector

	$\sigma^{\#1}_{0^+}\dagger$	$\tau^{\#1}_{0^+}\dagger$	$\tau^{\#2}_{0^+}\dagger$	$\sigma^{\#1}_{0^-}\dagger$
$\sigma^{\#1}_{0^+}$	$\frac{1}{(1+2k^2)^2t_1}$	$\frac{i\sqrt2\,k}{(1+2k^2)^2t_1}$	0	0
$\tau^{\#1}_{0^+}$	$\frac{i\sqrt2\,k}{(1+2k^2)^2t_1}$	$\frac{2k^2}{(1+2k^2)^2t_1}$	0	0
$\tau^{\#2}_{0^+}$	0	0	0	$-\frac{1}{t_2}$
$\sigma^{\#1}_{0^-}$	0	0	0	0

2^+ / 2^- sector (σ,τ)

	$\sigma^{\#1}_{2^+\alpha\beta}$	$\tau^{\#1}_{2^+\alpha\beta}$	$\sigma^{\#1}_{2^-\alpha\beta\chi}$
$\sigma^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{2}{(1+2k^2)^2t_1}$	$-\frac{2i\sqrt2\,k}{(1+2k^2)^2t_1}$	0
$\tau^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{2i\sqrt2\,k}{(1+2k^2)^2t_1}$	$\frac{4k^2}{(1+2k^2)^2t_1}$	0
$\sigma^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	$\frac{2}{2k^2r_1+t_1}$

2^+ / 2^- sector (ω,f)

	$\omega^{\#1}_{2^+\alpha\beta}$	$f^{\#1}_{2^+\alpha\beta}$	$\omega^{\#1}_{2^-\alpha\beta\chi}$
$\omega^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{t_1}{2}$	$-\frac{ikt_1}{\sqrt2}$	0
$f^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{ikt_1}{\sqrt2}$	k^2t_1	0
$\omega^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	$k^2r_1+\frac{t_1}{2}$

Source constraints

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

0^+ / 0^- sector (ω,f)

	$\omega^{\#1}_{0^+}$	$f^{\#1}_{0^+}$	$f^{\#2}_{0^+}$	$\omega^{\#1}_{0^-}$
$\omega^{\#1}_{0^+}\dagger$	$-t_1$	$i\sqrt2\,kt_1$	0	0
$f^{\#1}_{0^+}\dagger$	$-i\sqrt2\,kt_1$	$-2k^2t_1$	0	0
$f^{\#2}_{0^+}\dagger$	0	0	0	0
$\omega^{\#1}_{0^-}\dagger$	0	0	0	t_2

Right table (ω/f, 1^+ / 1^- sector)

	$\omega^{\#1\dagger}_{1^+\alpha\beta}$	$\omega^{\#2\dagger}_{1^+\alpha\beta}$	$f^{\#1\dagger}_{1^+\alpha\beta}$	$\omega^{\#1\dagger}_{1^-\alpha}$	$\omega^{\#2\dagger}_{1^-\alpha}$	$f^{\#1\dagger}_{1^-\alpha}$	$f^{\#2\dagger}_{1^-\alpha}$
$f^{\#2}_{1^-\alpha}$	0	0	0	ikt_1	0	0	0
$f^{\#1}_{1^-\alpha}$	0	0	0	0	0	0	0
$\omega^{\#2}_{1^-\alpha}$	0	0	0	$\frac{t_1}{\sqrt2}$	0	0	0
$\omega^{\#1}_{1^-\alpha}$	0	0	0	$k^2(r_1+r_5)-\frac{t_1}{2}$	$\frac{t_1}{\sqrt2}$	0	$-ikt_1$
$f^{\#1}_{1^+\alpha\beta}$	$-\frac{ik(t_1-2t_2)}{3\sqrt2}$	$\frac{1}{3}ik(t_1+t_2)$	$\frac{1}{3}k^2(t_1+t_2)$	0	0	0	0
$\omega^{\#2}_{1^+\alpha\beta}$	$-\frac{t_1-2t_2}{3\sqrt2}$	$\frac{t_1+t_2}{3}$	$-\frac{1}{3}ik(t_1+t_2)$	0	0	0	0
$\omega^{\#1}_{1^+\alpha\beta}$	$\frac{1}{6}(6k^2(2r_1+r_5)+t_1+4t_2)$	$-\frac{t_1-2t_2}{3\sqrt2}$	$\frac{ik(t_1-2t_2)}{3\sqrt2}$	0	0	0	0

Massive particle ($J^P = 1^+$)
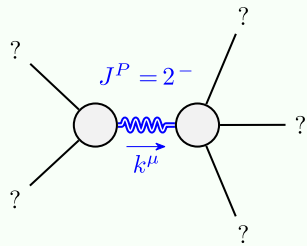
Pole residue:	$\frac{-3t_1t_2(t_1+t_2)+6r_1(t_1^2+2t_2^2)+3r_5(t_1^2+2t_2^2)}{(2r_1+r_5)(t_1+t_2)(-3t_1t_2+4r_1(t_1+t_2)+2r_5(t_1+t_2))}>0$
Polarisations:	3
Square mass:	$-\frac{3t_1t_2}{2(2r_1+r_5)(t_1+t_2)}>0$
Spin:	1
Parity:	Even

Massive particle ($J^P = 2^-$)

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

(No massless particles)

$r_1<0\ \&\&\ r_5>-2r_1\ \&\&\ t_1>0\ \&\&\ -t_1<t_2<0$