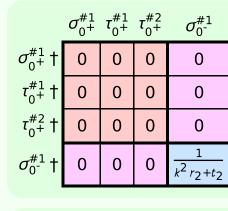
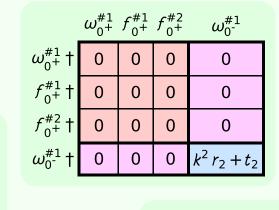
Lagrangian density
$-rac{1}{3}t_{1}\;\omega_{_{K}\alpha}^{\;\;\alpha'}\;\omega_{_{K}lpha}^{\;\;\kappa'}-rac{1}{3}t_{1}\;\omega_{_{K}\lambda}^{\;\;\kappa\lambda}\;\omega_{_{K}\lambda}^{\;\;\prime}+rac{2}{3}t_{2}\;\omega_{_{K}\lambda}^{\;\;\kappa\lambda}\;\omega_{_{K}\lambda}^{\;\;\prime}+rac{1}{3}t_{1}\;\omega_{_{K}\lambda}^{\;\;\prime}\;\omega_{_{K}\lambda}^{\;\;\prime}+$
$rac{1}{3}t_2\;\omega_{\kappa\lambda}^{\prime}\;\omega^{\kappa\lambda}^{\prime}+rac{2}{3}r_2\;\partial^{eta}\omega^{etalpha}_{\kappa}\partial_{eta}\omega^{\kappa}_{\beta}^{}-rac{1}{3}r_2\;\partial_{eta}\omega^{\kappa}_{eta}\partial_{\kappa}\omega^{lphaetaeta}_{}$
$\frac{2}{3} r_2  \partial_\theta \omega_{\alpha\beta}^{   } \partial_\kappa \omega^{\theta\alpha\beta} - \frac{1}{3} t_1  \partial^\alpha f_{        + \frac{1}{6} t_2  \partial^\alpha f_{        -$
$\frac{2}{3}t_1\partial^{\alpha}f_{\kappa\theta}\partial^{\kappa}f_{\alpha}^{\ \theta} - \frac{1}{6}t_2\partial^{\alpha}f_{\kappa\theta}\partial^{\kappa}f_{\alpha}^{\ \theta} - \frac{1}{3}t_1\partial^{\alpha}f^{\lambda}_{\ \kappa}\partial^{\kappa}f_{\alpha\lambda} + \frac{1}{6}t_2\partial^{\alpha}f^{\lambda}_{\ \kappa}\partial^{\kappa}f_{\alpha\lambda} +$
$\frac{1}{3}t_{1}\ \omega_{\kappa\alpha}^{\ \alpha}\ \partial^{\kappa}f'_{\ \ \ } + \frac{1}{3}t_{1}\ \omega_{\kappa\lambda}^{\ \ \ \ } \partial^{\kappa}f'_{\ \ \ } + \frac{2}{3}t_{1}\ \partial^{\alpha}f_{\ \kappa\alpha}\partial^{\kappa}f'_{\ \ \ } - \frac{1}{3}t_{1}\ \partial_{\kappa}f^{\ \lambda}_{\ \ \lambda}\partial^{\kappa}f'_{\ \ \ } +$
$\frac{1}{3}t_{1}\ \omega_{,\theta\kappa}\ \partial^{\kappa}f^{'\theta} + \frac{1}{3}t_{2}\ \omega_{,\theta\kappa}\ \partial^{\kappa}f^{'\theta} + \frac{4}{3}t_{1}\ \omega_{,\kappa\theta}\ \partial^{\kappa}f^{'\theta} - \frac{2}{3}t_{2}\ \omega_{,\kappa\theta}\ \partial^{\kappa}f^{'\theta} -$
$rac{1}{3}t_{1}\;\omega_{ heta_{1k}}\;\partial^{k}f^{' heta}-rac{1}{3}t_{2}\;\omega_{ heta_{1k}}\;\partial^{k}f^{' heta}+rac{2}{3}t_{1}\;\omega_{ heta_{k'}}\;\partial^{k}f^{' heta}+rac{2}{3}t_{2}\;\omega_{ heta_{k'}}\;\partial^{k}f^{' heta}-$
$\frac{1}{3}t_1\;\omega_{_{I}\alpha}^{ \alpha}\;\partial^\kappa f'_{_{K}}-\frac{1}{3}t_1\;\omega_{_{I}\lambda}^{ \lambda}\;\partial^\kappa f'_{_{K}}+\frac{1}{3}t_1\;\partial^\alpha f^\lambda_{_{K}}\;\partial^\kappa f_{\lambda\alpha}-\frac{1}{6}t_2\;\partial^\alpha f^\lambda_{_{K}}\;\partial^\kappa f_{\lambda\alpha}+$
$\frac{1}{3}t_1\partial_\kappa f_{\theta}{}\partial^\kappa f_{\theta}{}\partial^\kappa f_{\theta}{} - \frac{1}{6}t_2\partial_\kappa f_{\theta}{}\partial^\kappa f_{\theta}{} + \frac{2}{3}t_1\partial_\kappa f^{\theta}{}\partial^\kappa f_{\theta}{} +$
$rac{1}{6}t_2\partial_\kappa f^\lambda_{ heta}\partial^\kappa f_\lambda^{ heta} - rac{1}{3}t_1\partial^lpha f^\lambda_{}\partial^\kappa f_{\lambda\kappa} + rac{1}{3}r_2\partial_\kappa \omega^{lphaeta heta}\partial^\kappa \omega_{lphaeta heta} +$
$\frac{2}{3} r_2  \partial_\kappa \omega^{\theta \alpha \beta}  \partial^\kappa \omega_{\alpha \beta \theta} - \frac{2}{3} r_2  \partial^\beta \omega_{\mu}^{\ \alpha \lambda}  \partial_\lambda \omega_{\alpha \beta}^{\ \ \prime} + \frac{2}{3} r_2  \partial^\beta \omega_{\mu}^{\ \lambda \alpha}  \partial_\lambda \omega_{\alpha \beta}^{\ \ \prime}$
Added source term: $\left f^{lphaeta} \  au_{lphaeta} + \omega^{lphaeta\chi} \ \sigma_{lphaeta\chi}  ight $

$\tau_{1}^{\#2}{}_{\alpha}$	0	0	0	$\frac{12ik}{(3+4k^2)^2t_1}$	$\frac{12i\sqrt{2}k}{(3+4k^2)^2t_1}$	0	$\frac{24  k^2}{(3+4  k^2)^2  t_1}$
$\tau_{1}^{\#1}{}_{\alpha}$	0	0	0	0	0	0	0
$\sigma_{1^{ ext{-}}lpha}^{\#2}$	0	0	0	$\frac{6\sqrt{2}}{(3+4k^2)^2t_1}$	$\frac{12}{(3+4k^2)^2t_1}$	0	$-\frac{12i\sqrt{2}k}{(3+4k^2)^2t_1}$
$\sigma_{1^-}^{\#1}{}_{\alpha}$	0	0	0	$\frac{6}{(3+4 k^2)^2 t_1}$	$\frac{6\sqrt{2}}{(3+4k^2)^2t_1}$	0	$-\frac{12ik}{(3+4k^2)^2t_1}$
$\tau_{1}^{\#1}_{\alpha\beta}$	$\frac{i\sqrt{2}k(t_1-2t_2)}{3(1+k^2)t_1t_2}$	$\frac{i k (t_1 + 4 t_2)}{3 (1 + k^2)^2 t_1 t_2}$	$\frac{k^2 (t_1 + 4t_2)}{3 (1 + k^2)^2 t_1 t_2}$	0	0	0	0
$\sigma_{1}^{\#2}$	$\frac{\sqrt{2} (t_1 - 2t_2)}{3(1+k^2)t_1t_2}$	$\frac{t_1+4t_2}{3(1+k^2)^2t_1t_2}$	$-\frac{i k (t_1+4 t_2)}{3 (1+k^2)^2 t_1 t_2}$	0	0	0	0
$\sigma_{1}^{\#1}_{\alpha\beta}$		$\frac{\sqrt{2} (t_1 - 2t_2)}{3(1 + k^2) t_1 t_2}$	$-\frac{i\sqrt{2}k(t_1-2t_2)}{3(1+k^2)t_1t_2}$	0	0	0	0
	$\sigma_{1}^{\#1} + ^{lphaeta}$	$\sigma_{1}^{\#2} + \alpha \beta$	$\tau_1^{#1} + \alpha \beta$	$\sigma_{1}^{\#1} +^{\alpha}$	$\sigma_{1}^{\#2} +^{lpha}$	$\tau_{1}^{\#1} +^{\alpha}$	$\tau_1^{\#2} + ^{\alpha}$

	$f_{1}^{*2}$	0	0	0	<i>آلاد</i> ا	$\frac{1}{3}\bar{l}\sqrt{2}kt_1$	0	$\frac{2k^2t_1}{3}$	
#	$f_{1^-}^{\#_1} \alpha$	0	0	0	0	0	0	0	
¢	$\omega_{1^{-}\alpha}^{*2}$	0	0	0	$\frac{t_1}{3\sqrt{2}}$	17 3	0	$-\frac{1}{3}\overline{l}kt_1\left -\frac{1}{3}\overline{l}\sqrt{2}kt_1\right $	
#	$\omega_{1^{-1}}^{\#^{-1}}\alpha$	0	0	0	6 6	$\frac{t_1}{3\sqrt{2}}$	0	$-\frac{1}{3}$ $\bar{l}$ $kt_1$	
[#7	$f_1^{r+}\alpha\beta$	$-\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	$\frac{1}{3}\bar{l}k(t_1+t_2)$	$\frac{1}{3}k^{2}(t_{1}+t_{2})$	0	0	0	0	
#2	$\omega_1^{"+} + \alpha_{eta}$	$-\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{t_1+t_2}{3}$	$-\frac{1}{3}ik(t_1+t_2)\left \frac{1}{3}k^2(t_1+t_2)\right $	0	0	0	0	
#	$\omega_1^{"\dot{+}} \alpha_{eta}$	$\omega_{1}^{\#1} + \alpha \beta \left[ \frac{1}{6} (t_1 + 4t_2) \right]$	$-\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	0	0	0	0	
		$\omega_{1}^{\#1} + \alpha^{eta}$	$\omega_{1}^{\#2} + ^{lphaeta}$	$f_{1+}^{#1} +^{\alpha\beta}$	$\omega_{1}^{\#_1} +^{\alpha}$	$\omega_1^{\#2} +^{lpha}$	$f_{1^{\bar{-}}}^{\#1} \dagger^{\alpha}$	$f_1^{#2} + \alpha$	





5 20

 $\tau_{2+}^{\#1}\alpha\beta - 2ik \ \sigma_{2+}^{\#1}\alpha\beta == 0$ 

Total #:

 $t_1^{\#1}\alpha\beta + ik \ \sigma_1^{\#2}\alpha\beta == 0$ 

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 $\sigma_{1}^{\#1}{}^{\alpha} := \sigma_{1}^{\#2}{}^{\alpha}$ 

 $\tau_{1}^{\#1}{}^{\alpha} == 0$ 

3

0

 $\tau_{1}^{\#2}{}^{\alpha}+2\,\bar{i}\,k\,\,\sigma_{1}^{\#1}{}^{\alpha}=$ 

 $\sigma_{0}^{\#1} == 0$ 

	$\omega_{2^{+}\alpha\beta}^{\#1}$	$f_{2}^{\#1}{}_{\alpha\beta}$	$\omega_{2^{-}\alpha\beta\chi}^{\#1}$
$\omega_{2}^{\#1}\dagger^{lphaeta}$	<u>t</u> 1 2	$-\frac{ikt_1}{\sqrt{2}}$	0
$f_{2}^{#1} \dagger^{\alpha\beta}$	$\frac{i k t_1}{\sqrt{2}}$	$k^2 t_1$	0
$ u_2^{\#1} \dagger^{\alpha\beta\chi}$	0	0	<u>t</u> 1 2

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 $\tau_{0}^{\#1} == 0$ 

#

Source constraints SO(3) irreps

 $\tau_{0}^{\#2} == 0$ 

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

Massive part	ticl	e
Pole residue		

	Massive partici	le
- ?	Pole residue:	$-\frac{1}{r_2} > 0$
	Polarisations:	1
	Square mass:	$-\frac{t_2}{r_2} > 0$
	Spin:	0
	Parity:	Odd

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