



(No massive particles)

Lagrangian density	Added source term:
$ \begin{aligned} & -\lambda \omega_{\kappa\theta} \omega'^{\theta\kappa} - \lambda \omega'^{\theta\kappa} \omega_{\kappa\theta} - \lambda \omega_{\kappa\alpha} \omega'^{\alpha\kappa} - \lambda \omega_{\kappa\alpha} \omega'^{\kappa\alpha} - \lambda \omega_{\kappa\zeta} \omega'^{\zeta\kappa} - \\ & 2\lambda f'^{\theta} \partial_{\theta} \omega_{\kappa}^{\kappa} + 2\lambda \partial_{\theta} \omega'^{\theta\kappa} + 2\lambda f'^{\theta} \partial_{\kappa} \omega_{\theta}^{\kappa} - 2\lambda f'_{\theta} \partial_{\kappa} \omega^{\theta\kappa} - \\ & \frac{1}{2} \lambda \partial^{\alpha} f_{\theta\kappa} \partial^{\kappa} f_{\alpha}^{\theta} - \frac{1}{2} \lambda \partial^{\alpha} f_{\kappa\theta} \partial^{\kappa} f_{\alpha}^{\theta} - \frac{1}{2} \lambda \partial^{\alpha} f_{\kappa}^{\zeta} \partial^{\kappa} f_{\alpha\zeta} + \\ & \lambda \omega_{\kappa\alpha}^{\alpha} \partial^{\kappa} f'_{\theta} + \lambda \omega_{\kappa\zeta}^{\zeta} \partial^{\kappa} f'_{\theta} + 2\lambda \partial^{\alpha} f_{\kappa\alpha} \partial^{\kappa} f'_{\theta} - \lambda \partial_{\kappa} f_{\zeta}^{\zeta} \partial^{\kappa} f'_{\theta} + \\ & 2\lambda \omega_{\kappa\theta} \partial^{\kappa} f'^{\theta\kappa} - \lambda \omega_{\kappa\alpha}^{\alpha} \partial^{\kappa} f'_{\theta} - \lambda \omega_{\kappa\zeta}^{\zeta} \partial^{\kappa} f'_{\theta} + \frac{1}{2} \lambda \partial^{\alpha} f_{\kappa}^{\zeta} \partial^{\kappa} f_{\zeta\alpha} + \\ & \frac{1}{2} \lambda \partial_{\kappa} f_{\theta}^{\zeta} \partial^{\kappa} f_{\zeta}^{\theta} + \frac{1}{2} \lambda \partial_{\kappa} f_{\theta}^{\zeta} \partial^{\kappa} f_{\zeta}^{\theta} - \lambda \partial^{\alpha} f_{\zeta}^{\zeta} \partial^{\kappa} f_{\alpha}^{\kappa} \end{aligned} $	$f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$

Added source term:	$f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$
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$\omega_1^{\#1} + \alpha\beta$	0	0	$f_1^{\#1} + \alpha\beta$	0	$\omega_1^{\#1} - \alpha$	0	$\omega_1^{\#2} - \alpha$	0	$f_1^{\#1} - \alpha$	0
$\omega_1^{\#2} + \alpha\beta$	0	0	$\omega_1^{\#2} + \alpha\beta$	0	0	0	0	0	0	0
$f_1^{\#1} + \alpha\beta$	0	0	$f_1^{\#1} + \alpha\beta$	0	0	0	0	0	0	0
$\omega_1^{\#1} + \alpha$	0	0	$\omega_1^{\#1} + \alpha$	0	0	0	0	0	0	0
$\omega_1^{\#2} + \alpha$	0	0	$\omega_1^{\#2} + \alpha$	0	0	0	0	0	0	0
$f_1^{\#1} + \alpha$	0	0	$f_1^{\#1} + \alpha$	0	0	0	0	0	0	0
$f_1^{\#2} + \alpha$	0	0	$f_1^{\#2} + \alpha$	0	0	0	0	0	0	0

[illegible]

Source constraints	
SO(3) irreps	#
$\sigma_0^{\#1} == 0$	1
$\tau_{0+}^{\#2} == 0$	1
$\sigma_{0+}^{\#1} == 0$	1
$\tau_1^{\#2\alpha} == 0$	3
$\tau_1^{\#1\alpha} == 0$	3
$\sigma_1^{\#2\alpha} == 0$	3
$\sigma_1^{\#1\alpha} == 0$	3
$\tau_{1+}^{\#1\alpha\beta} == 0$	3
$\sigma_{1+}^{\#2\alpha\beta} == 0$	3
$\sigma_{1+}^{\#1\alpha\beta} == 0$	3
$\sigma_2^{\#1\alpha\beta\chi} == 0$	5
$\sigma_{2+}^{\#1\alpha\beta} == 0$	5
Total #:	34

	$\sigma_{0^+}^{\#1}$	$\tau_{0^+}^{\#1}$	$\tau_{0^+}^{\#2}$	$\sigma_{0^-}^{\#1}$
$\sigma_{0^+}^{\#1} \uparrow$	0	0	0	0
$\tau_{0^+}^{\#1} \uparrow$	0	$-\frac{1}{2k^2\lambda}$	0	0
$\tau_{0^+}^{\#2} \uparrow$	0	0	0	0
$\sigma_{0^-}^{\#1} \uparrow$	0	0	0	0

	$\omega_{0+}^{\#1}$	$f_{0+}^{\#1}$	$f_{0+}^{\#2}$	$\omega_{0-}^{\#1}$
$\omega_{0+}^{\#1} \dagger$	0	0	0	0
$f_{0+}^{\#1} \dagger$	0	$-2 k^2 \lambda$	0	0
$f_{0+}^{\#2} \dagger$	0	0	0	0
$\omega_{0-}^{\#1} \dagger$	0	0	0	0

$$\begin{array}{c}
\omega_{2^+}^{\#1} \alpha\beta \quad f_{2^+}^{\#1} \alpha\beta \quad \omega_{2^-}^{\#1} \alpha\beta\chi \\
\begin{array}{|c|c|c|}
\hline
\omega_{2^+}^{\#1} \dagger^{\alpha\beta} & 0 & 0 & 0 \\
\hline
f_{2^+}^{\#1} \dagger^{\alpha\beta} & 0 & k^2 \lambda & 0 \\
\hline
\omega_{2^-}^{\#1} \dagger^{\alpha\beta\chi} & 0 & 0 & 0 \\
\hline
\end{array}
\end{array}$$
$$\begin{array}{c}
 \sigma_{2^+}^{\#1} \quad \tau_{2^+}^{\#1} \quad \sigma_{2^-}^{\#1} \\
 \sigma_{2^+}^{\#1} \dagger^{\alpha\beta} \quad \tau_{2^+}^{\#1} \dagger^{\alpha\beta} \quad \sigma_{2^-}^{\#1} \dagger^{\alpha\beta\chi}
 \end{array}
 \begin{array}{|c|c|c|}
 \hline
 0 & 0 & 0 \\
 \hline
 0 & \frac{1}{k^2 \lambda} & 0 \\
 \hline
 0 & 0 & 0 \\
 \hline
 \end{array}$$

Unitarity conditions