Lagrangian density

$$\omega^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} - \frac{1}{2} r_3\, \partial_\iota \omega^{\kappa\lambda}{}_\kappa\, \partial^\iota \omega_\lambda{}^\alpha{}_\alpha - r_5\, \partial_\iota \omega^{\kappa\lambda}{}_\kappa\, \partial^\iota \omega_\lambda{}^\alpha{}_\alpha + \frac{1}{2} r_3\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial_\kappa \omega^{\theta\kappa\lambda} -$$
$$r_5\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial_\kappa \omega^{\theta\kappa\lambda} - \frac{1}{2} r_3\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial_\kappa \omega^{\theta\kappa\lambda} + r_5\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial_\kappa \omega^{\theta\kappa\lambda} - \frac{1}{2} r_3\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial_\kappa \omega^{\kappa\lambda\theta} -$$
$$r_5\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial_\kappa \omega^{\kappa\lambda\theta} + r_3\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial_\kappa \omega^{\kappa\lambda\theta} + 2\, r_5\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial_\kappa \omega^{\kappa\lambda\theta} - 4\, r_3\, \partial^\beta \omega_\iota{}^{\lambda\alpha}\, \partial_\lambda \omega_{\alpha\beta}{}^\iota -$$
$$\frac{1}{2} r_3\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial^\lambda \omega^{\theta\kappa}{}_\kappa + r_5\, \partial_\alpha \omega_\lambda{}^\alpha{}_\theta\, \partial^\lambda \omega^{\theta\kappa}{}_\kappa + \frac{1}{2} r_3\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial^\lambda \omega^{\theta\kappa}{}_\kappa - r_5\, \partial_\theta \omega_\lambda{}^\alpha{}_\alpha\, \partial^\lambda \omega^{\theta\kappa}{}_\kappa$$

| $\omega_{2^+}^{\#1}{}_{\alpha\beta}$ \ $\omega_{2^-}^{\#1}{}_{\alpha\beta\chi}$ | 0 | 0 |
|---|---|---|
| $-\frac{3 k^2 r_3}{2}$ | 0 | |

$\omega_{2^+}^{\#1}{}^{\dagger\alpha\beta}$ $\omega_{2^-}^{\#1}{}^{\dagger\alpha\beta\chi}$

| $\sigma_{2^+}^{\#1}{}_{\alpha\beta}$ \ $\sigma_{2^-}^{\#1}{}_{\alpha\beta\chi}$ | 0 | 0 |
|---|---|---|
| $-\frac{2}{3 k^2 r_3}$ | 0 | |

$\sigma_{2^+}^{\#1}{}^{\dagger\alpha\beta}$ $\sigma_{2^-}^{\#1}{}^{\dagger\alpha\beta\chi}$

| | $\sigma_{1^+}^{\#1}{}_{\alpha\beta}$ | $\sigma_{1^+}^{\#2}{}_{\alpha\beta}$ | $\sigma_{1^-}^{\#1}{}_{\alpha}$ | $\sigma_{1^-}^{\#2}{}_{\alpha}$ |
|---|---|---|---|---|
| $\sigma_{1^+}^{\#1}{}^{\dagger\alpha\beta}$ | $\frac{1}{k^2 (2 r_3 + r_5)}$ | 0 | 0 | 0 |
| $\sigma_{1^+}^{\#2}{}^{\dagger\alpha\beta}$ | 0 | 0 | 0 | 0 |
| $\sigma_{1^-}^{\#1}{}^{\dagger\alpha}$ | 0 | 0 | $\frac{2}{k^2 (r_3 + 2 r_5)}$ | 0 |
| $\sigma_{1^-}^{\#2}{}^{\dagger\alpha}$ | 0 | 0 | 0 | 0 |

| | $\omega_{1^+}^{\#1}{}_{\alpha\beta}$ | $\omega_{1^+}^{\#2}{}_{\alpha\beta}$ | $\omega_{1^-}^{\#1}{}_{\alpha}$ | $\omega_{1^-}^{\#2}{}_{\alpha}$ |
|---|---|---|---|---|
| $\omega_{1^+}^{\#1}{}^{\dagger\alpha\beta}$ | $k^2 (2 r_3 + r_5)$ | 0 | 0 | 0 |
| $\omega_{1^+}^{\#2}{}^{\dagger\alpha\beta}$ | 0 | 0 | 0 | 0 |
| $\omega_{1^-}^{\#1}{}^{\dagger\alpha}$ | 0 | 0 | $\frac{1}{2} k^2 (r_3 + 2 r_5)$ | 0 |
| $\omega_{1^-}^{\#2}{}^{\dagger\alpha}$ | 0 | 0 | 0 | 0 |

Source constraints

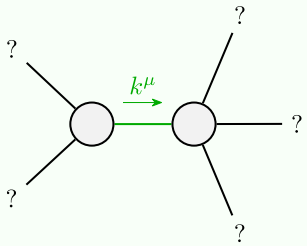
| SO(3) irreps | # |
|---|---|
| $\sigma_{0^-}^{\#1} == 0$ | 1 |
| $\sigma_{0^+}^{\#1} == 0$ | 1 |
| $\sigma_{1^-}^{\#2\,\alpha} == 0$ | 3 |
| $\sigma_{1^+}^{\#2\,\alpha\beta} == 0$ | 3 |
| $\sigma_{2^-}^{\#1\,\alpha\beta\chi} == 0$ | 5 |
| Total #: | 13 |

| $\sigma_{0^+}^{\#1}$ \ $\sigma_{0^-}^{\#1}$ | 0 | 0 |
|---|---|---|
| 0 | 0 | |

$\sigma_{0^+}^{\#1}{}^{\dagger}$ $\sigma_{0^-}^{\#1}{}^{\dagger}$

| $\omega_{0^+}^{\#1}$ \ $\omega_{0^-}^{\#1}$ | 0 | 0 |
|---|---|---|
| 0 | 0 | |

$\omega_{0^+}^{\#1}{}^{\dagger}$ $\omega_{0^-}^{\#1}{}^{\dagger}$




Quadratic pole

| | |
|---|---|
| Pole residue: | $-\frac{1}{r_3 (2 r_3 + r_5) (r_3 + 2 r_5)} > 0$ |
| Polarisations: | 2 |

(No massive particles)

$$r_3 < 0 \,\&\&\, (r_5 < -\frac{r_3}{2} \,||\, r_5 > -2 r_3) \,||\, r_3 > 0 \,\&\&\, -2 r_3 < r_5 < -\frac{r_3}{2}$$