

Lagrangian density

$$\frac{1}{2} \alpha \partial_\beta h^\chi_\chi \partial^\beta h^\alpha_\alpha + \alpha \partial_\alpha h^{\alpha\beta} \partial_\chi h^\chi_\beta - \alpha \partial^\beta h^\alpha_\alpha \partial_\chi h^\chi_\beta - \frac{1}{2} \alpha \partial_\chi h_{\alpha\beta} \partial^\chi h^{\alpha\beta}$$

Added source term: $| h^{\alpha\beta} \mathcal{T}_{\alpha\beta}$

| Source constraints | SO(3) irreps | # |
|-------------------------------------|--------------|---|
| $\mathcal{T}^{\#2}_{0+} == 0$ | | 1 |
| $\mathcal{T}^{\#1\alpha}_{1-} == 0$ | | 3 |
| Total #: | | 4 |

| | |
|---|--------------------------|
| $\mathcal{T}^{\#1}_{0+} +$ | $\mathcal{T}^{\#1}_{0+}$ |
| $\mathcal{T}^{\#2}_{0+} +$ | $\mathcal{T}^{\#2}_{0+}$ |
| $\begin{bmatrix} \frac{1}{\alpha k^2} & 0 \\ 0 & 0 \end{bmatrix}$ | |

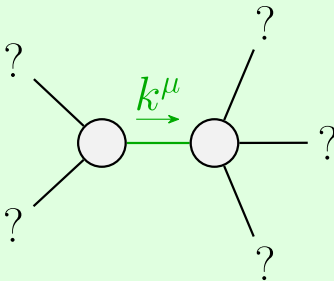
| | |
|-----------------------------------|--------------------------|
| $\mathcal{T}^{\#1}_{1-} + \alpha$ | $\mathcal{T}^{\#1}_{1-}$ |
| $\begin{bmatrix} 0 \end{bmatrix}$ | α |

| | |
|-----------------------------------|----------------|
| $h^{\#1}_{1-} + \alpha$ | $h^{\#1}_{1-}$ |
| $\begin{bmatrix} 0 \end{bmatrix}$ | α |

| |
|---|
| $\mathcal{T}^{\#1}_{2+ \alpha\beta}$ |
| $\mathcal{T}^{\#1}_{2+} + \alpha\beta$ |
| $\begin{bmatrix} -\frac{2}{\alpha k^2} \end{bmatrix}$ |

| |
|---|
| $h^{\#1}_{2+ \alpha\beta}$ |
| $h^{\#1}_{2+} + \alpha\beta$ |
| $\begin{bmatrix} -\frac{\alpha k^2}{2} \end{bmatrix}$ |

| | | |
|------------------|----------------|----------------|
| | $h^{\#1}_{0+}$ | $h^{\#2}_{0+}$ |
| $h^{\#1}_{0+} +$ | αk^2 | 0 |
| $h^{\#2}_{0+} +$ | 0 | 0 |



Quadratic pole

Pole residue: $|- \frac{1}{\alpha} > 0$

Polarisations: $| 2$

Unitarity conditions
 $\alpha < 0$

(No massive particles)