

## Lagrangian density

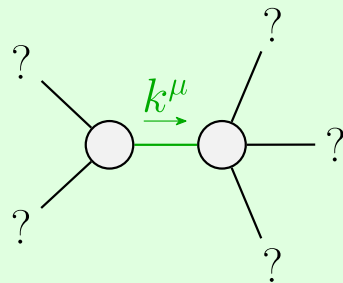
$$\frac{1}{2} \alpha \partial_\beta h^\chi_\chi \partial^\beta h^\alpha_\alpha + \alpha \partial_\alpha h^{\alpha\beta} \partial_\chi h^\chi_\beta - \alpha \partial^\beta h^\alpha_\alpha \partial_\chi h^\chi_\beta - \frac{1}{2} \alpha \partial_\chi h_{\alpha\beta} \partial^\chi h^{\alpha\beta}$$

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

$$\mathcal{T}_{2^+}^{\#1} \dagger^{\alpha\beta} \boxed{-\frac{2}{\alpha k^2}}$$

$$h_{2^+}^{\#1} \dagger^{\alpha\beta} \boxed{-\frac{\alpha k^2}{2}}$$

$$\mathcal{T}_{1^-}^{\#1} \dagger^\alpha \boxed{0}$$



Quadratic pole

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

Polarisations: 2

## Unitarity conditions

$$\alpha < 0$$

(No massive particles)

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

$$\begin{array}{c} \mathcal{T}_{0^+}^{\#1} \dagger \\ \mathcal{T}_{0^+}^{\#2} \dagger \end{array} \begin{array}{|c|c|} \hline \frac{1}{\alpha k^2} & 0 \\ \hline 0 & 0 \\ \hline \end{array} \begin{array}{c} \mathcal{T}_{0^+}^{\#1} \\ \mathcal{T}_{0^+}^{\#2} \end{array}$$

$$\begin{array}{c} h_{0^+}^{\#1} \dagger \\ h_{0^+}^{\#2} \dagger \end{array} \begin{array}{|c|c|} \hline \alpha k^2 & 0 \\ \hline 0 & 0 \\ \hline \end{array} \begin{array}{c} h_{0^+}^{\#1} \\ h_{0^+}^{\#2} \end{array}$$

$$h_{1^-}^{\#1} \dagger^\alpha \boxed{0} h_{1^-}^{\#1} \alpha$$