## Lagrangian density

$$h^{\alpha\beta}\,\mathcal{T}_{\alpha\beta}+\frac{1}{2}\,\alpha\,\partial_{\beta}h^{\chi}{}_{\chi}\,\partial^{\beta}h^{\alpha}{}_{\alpha}+\alpha\,\partial_{\alpha}h^{\alpha\beta}\,\partial_{\chi}h_{\beta}{}^{\chi}-\alpha\,\partial^{\beta}h^{\alpha}{}_{\alpha}\,\partial_{\chi}h_{\beta}{}^{\chi}-\frac{1}{2}\,\alpha\,\partial_{\chi}h_{\alpha\beta}\,\partial^{\chi}h^{\alpha\beta}$$

### Source constraints

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

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

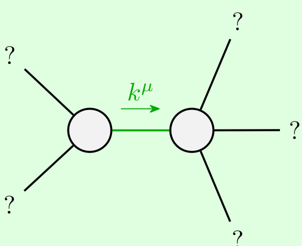
$$\begin{array}{c|cc} & h^{\#2}_{0^+}{}^{\dagger} & h^{\#1}_{0^+}{}^{\dagger} \\ \hline h^{\#1}_{0^+} & 0 & \alpha k^2 \\ h^{\#2}_{0^+} & 0 & 0 \end{array}$$

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

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

$$\begin{array}{c|c} & h^{\#1}_{2^+}{}_{\alpha\beta} \\ \hline h^{\#1}_{2^+}{}^{\dagger\alpha\beta} & -\frac{\alpha k^2}{2} \end{array}$$

$$\begin{array}{c|c} & h^{\#1}_{1^-}{}^{\dagger\alpha} \\ \hline h^{\#1}_{1^-}{}_{\alpha} & 0 \end{array}$$




| Quadratic pole | |
|---|---|
| Pole residue: | $-\frac{1}{\alpha} > 0$ |
| Polarisations: | 2 |

(No massive particles)

## Unitarity conditions

$\alpha < 0$