

# Lagrangian density

$$\phi \rho + h^{\alpha \beta} \mathcal{T}_{\alpha \beta} + \beta \partial_\alpha \phi \partial^\alpha \phi + \frac{1}{2} \alpha \partial_\beta h^\chi_\chi \partial^\beta h^\alpha_\alpha +$$

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

$\rho_{0+}^{\#1} \dagger$	$\mathcal{T}_{0+}^{\#2} \dagger$	$\mathcal{T}_{0+}^{\#1} \dagger$
0	0	$\frac{1}{\alpha k^2}$
0	0	0
$\frac{1}{\beta k^2}$	0	0

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

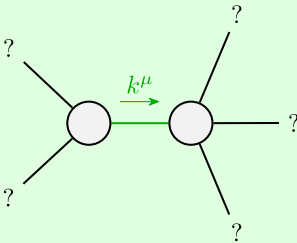
	$h_{0+}^{\#1}$	$h_{0+}^{\#2}$	$\phi_{0+}^{\#1}$
$h_{0+}^{\#1} \dagger$	$\alpha k^2$	0	0
$h_{0+}^{\#2} \dagger$	0	0	0
$\phi_{0+}^{\#1} \dagger$	0	0	$\beta k^2$

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

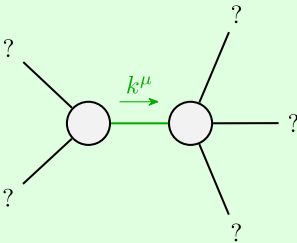
	$\mathcal{T}_{2+}^{\#1}{}_{\alpha \beta}$
$\mathcal{T}_{2+}^{\#1}{}_{\alpha \beta} \dagger$	$-\frac{2}{\alpha k^2}$

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

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



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



Quadratic pole	
Pole residue:	$\frac{1}{\beta} > 0$
Polarisations:	1

Unitarity conditions

$\alpha < 0$  &&  $\beta > 0$

(No massive particles)