Particle spectrograph

Wave operator and propagator

Quadratic (free) action

$$S == \int\int\int\int (\beta (h_{\alpha\beta}\, h^{\alpha\beta} - h^{\alpha}{}_{\alpha}\, h^{\beta}{}_{\beta}) + h^{\alpha\beta}\, \mathcal{T}_{\alpha\beta} + \frac{1}{2}\, \alpha (\partial_{\beta} h^{\chi}{}_{\chi}\, \partial^{\beta} h^{\alpha}{}_{\alpha} + 2\, \partial_{\alpha} h^{\alpha\beta}\, \partial_{\chi} h_{\beta}{}^{\chi} - 2\, \partial^{\beta} h^{\alpha}{}_{\alpha}\, \partial_{\chi} h_{\beta}{}^{\chi} - \partial_{\chi} h_{\alpha\beta}\, \partial^{\chi} h^{\alpha\beta}))[t, x, y, z]\, dz\, dy\, dx\, dt$$

	$h^{\#1}_{0^+}$	$h^{\#2}_{0^+}$
$h^{\#1}_{0^+}\,\dagger$	$-2\,\beta + \alpha k^2$	$-\sqrt{3}\,\beta$
$h^{\#2}_{0^+}\,\dagger$	$-\sqrt{3}\,\beta$	0

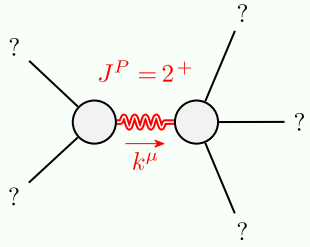
(No source constraints)

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

$\mathcal{T}^{\#1}_{1^-}{}^{\dagger\alpha}$ $\frac{1}{\beta}$ $h^{\#1}_{1^-}{}^{\dagger\alpha}$ β

	$\mathcal{T}^{\#2}_{0^+}{}^{\dagger}$	$\mathcal{T}^{\#1}_{0^+}{}^{\dagger}$
$\mathcal{T}^{\#1}_{0^+}$	$-\frac{1}{\sqrt{3}\,\beta}$	0
$\mathcal{T}^{\#2}_{0^+}$	$\frac{2\beta - \alpha k^2}{3\beta^2}$	$-\frac{1}{\sqrt{3}\,\beta}$

Massive and massless spectra



Massive particle	
Pole residue:	$-\frac{2}{\alpha} > 0$
Polarisations:	5
Square mass:	$\frac{2\,\beta}{\alpha} > 0$
Spin:	2
Parity:	Even

(No massless particles)

Unitarity conditions

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