Particle spectrograph

Wave operator and propagator

Quadratic (free) action

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

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

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

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

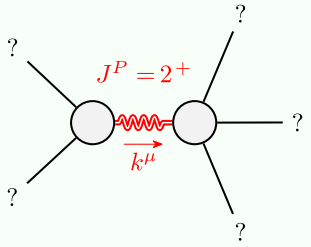
	$\mathcal{T}^{\#1}_{1^-\alpha}$
$\mathcal{T}^{\#1}_{1^-}\,\dagger^{\alpha}$	$\frac{1}{\beta}$

	$h^{\#1}_{1^-\alpha}$
$h^{\#1}_{1^-}\,\dagger^{\alpha}$	β

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

(No source constraints)

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

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