

Particle spectrograph

Wave operator and propagator

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

$\#1$ 0^+ \mathcal{T}

$\frac{1}{\frac{\beta(\beta-4)\gamma}{\beta-\gamma} + \alpha \mathcal{K}}$

$\#2$ 0^+ \mathcal{T}

$\frac{\sqrt{3}\gamma}{\beta(\beta-4)\gamma + \alpha(\beta-\gamma)k^2}$

$\#1$ 0^+ h

$\beta-3\gamma + \alpha \mathcal{K}$

$\#2$ 0^+ h

$-\sqrt{3}\gamma$

$\#1$ 2^+ $\mathcal{T}_{\alpha\beta}$

$\frac{1}{\beta \frac{\alpha \mathcal{K}}{2}}$

$\#1$ 1^- $h\alpha$

β

$\#2$ 0^+ \mathcal{T}

$\frac{\sqrt{3}\gamma}{\beta(\beta-4)\gamma + \alpha(\beta-\gamma)k^2}$

$\#2$ 0^+ h

$\beta+\gamma(-1-\frac{3\gamma}{\beta-3\gamma+\alpha \mathcal{K}})$

$\#1$ 2^+ $h\alpha\beta$

$\frac{1}{\beta-\frac{\alpha \mathcal{K}}{2}}$

$\#1$ 1^- \mathcal{T}_α

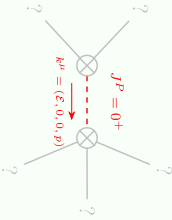
$\frac{1}{\beta}$

(No source constraints)

Massive and massless spectra

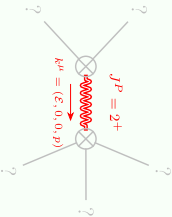
Poleresidue:	$\beta^2-2\beta+4\gamma^2 > 0$
Square mass:	$\frac{\beta(\beta-4)\gamma}{\alpha(\beta-\gamma)} > 0$
Spin:	0
Parity:	Even

Massive particle



Pole residue:	$-\frac{2}{\alpha} > 0$
Squaremass:	$\frac{2\beta}{\alpha} > 0$
Spin:	2
Parity:	Even

Massive particle



(No particles)

Unitarity conditions