Particle spectrograph

Wave operator and propagator

Quadratic (free) action
$$S_{F} := \iiint (h^{\alpha\beta} \mathcal{T}_{\alpha\beta} - \alpha (\partial_{\beta}\partial_{\alpha}h^{\alpha\beta} \partial_{\delta}\partial_{\chi}h^{\chi\delta} + \partial_{\beta}\partial^{\beta}h^{\alpha}_{\alpha} (-2 \partial_{\delta}\partial_{\chi}h^{\chi\delta} + \partial_{\delta}\partial^{\delta}h^{\chi}_{\chi})))[t, x, y, z] dz dy dx dt$$

$$Source constraints/gauge generators SO(3) irreps Multiplicities
$$\mathcal{T}_{0^{+}}^{\#2} := 0 \qquad 1$$

$$\mathcal{T}_{1^{-}}^{\#1\alpha} := 0 \qquad 3$$

$$\mathcal{T}_{2^{+}}^{\#1\alpha\beta} := 0 \qquad 5$$
Total constraints: 9
$$h_{0^{+}}^{\#1} + \frac{\partial_{\beta}\partial_{\gamma}h^{\chi\delta} + \partial_{\delta}\partial^{\delta}h^{\chi}_{\chi}}{\partial_{\gamma}h^{\chi\delta} + \partial_{\delta}\partial^{\delta}h^{\chi}_{\chi}} = 0$$$$

Massive and massless spectra

(No massless particles) (No massive particles)

Unitarity conditions

True