Particle spectrograph

Wave operator and propagator

Quadratic (free) action

$S_F ==$

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

$h^{\#1}_{1^-}{}^{\alpha}$ $h^{\#1}_{1^-}{}^{\alpha}$

0

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

0

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

0

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

0

$h^{\#1}_{0^+}$ $h^{\#2}_{0^+}$

$-\frac{1}{3\,\alpha\,k^4}$	0
0	0

$\mathcal{T}^{\#1}_{0^+}$ $\mathcal{T}^{\#2}_{0^+}$

$-\frac{1}{3\,\alpha\,k^4}$	0
0	0

$h^{\#1}_{0^+}$ $h^{\#2}_{0^+}$

$-3\,\alpha\,k^4$	0
0	0

$\mathcal{T}^{\#1}_{0^+}$ $\mathcal{T}^{\#2}_{0^+}$

$-3\,\alpha\,k^4$	0
0	0

Source constraints/gauge generators

SO(3) irreps	Multiplicities
$\mathcal{T}^{\#2}_{0^+} == 0$	1
$\mathcal{T}^{\#1}_{1^-}{}^{\alpha} == 0$	3
$\mathcal{T}^{\#1}_{2^+}{}^{\alpha\beta} == 0$	5
Total constraints:	9

Massive and massless spectra

(No massless particles)

(No massive particles)

Unitarity conditions

True