

Particle spectrograph

Wave operator and propagator

| Spin-parity form | Covariant form | Multiplicities |
|---|---|----------------|
| $\overset{\#2}{0^+} \mathcal{T} == 0$ | $\partial_\beta \partial_\alpha \mathcal{T}^{\alpha\beta} == 0$ | 1 |
| $\overset{\#1}{1^-} \mathcal{T}^{\alpha} == 0$ | $\partial_\chi \partial_\beta \partial^\alpha \mathcal{T}^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \mathcal{T}^{\alpha\beta}$ | 3 |
| $\overset{\#1}{2^+} \mathcal{T}^{\alpha\beta} == 0$ | $2 \quad \partial_\delta \partial_\chi \partial^\beta \partial^\alpha \mathcal{T}^{\chi\delta} + \partial_\delta \partial^\delta \partial^\beta \partial^\alpha \mathcal{T}^{\chi}_{\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\chi \mathcal{T}^{\alpha\beta} + \eta^{\alpha\beta} \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\chi \mathcal{T}^{\chi\delta} ==$ $3 \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \mathcal{T}^{\beta\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\beta \mathcal{T}^{\alpha\chi} + \eta^{\alpha\beta} \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \mathcal{T}^{\chi}_{\chi}$ | 5 |
| Total expected gauge generators: | | 9 |

$$S == \iiint \big(h^{\alpha\beta} \mathcal{T}_{\alpha\beta} - \alpha (\partial_\beta \partial_\alpha h^{\alpha\beta} \partial_\delta \partial_\chi h^{\chi\delta} + \partial_\beta \partial^\beta h^\alpha_{\alpha} (-2 \partial_\delta \partial_\chi h^{\chi\delta} + \partial_\delta \partial^\delta h^\chi_{\chi})) \big) [t, x, y, z] d z \, d y \, d x$$

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

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

$\begin{bmatrix} -\frac{1}{3\alpha} \ell & 0 \end{bmatrix}$

$\begin{bmatrix} 0 & 0 \end{bmatrix}$

$\overset{\#1}{0^+} h$

$\overset{\#2}{0^+} h$

$\begin{bmatrix} -3\alpha \ell & 0 \end{bmatrix}$

$\begin{bmatrix} 0 & 0 \end{bmatrix}$

$\overset{2^+}{h} \overset{\#1}{\mathcal{T}}$

$\overset{2^+}{h} \overset{\#1}{\mathcal{T}}$

$\begin{bmatrix} 0 \end{bmatrix}$

$\begin{bmatrix} 0 \end{bmatrix}$

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

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

$\begin{bmatrix} 0 \end{bmatrix}$

$\begin{bmatrix} 0 \end{bmatrix}$

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

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

$\begin{bmatrix} 0 \end{bmatrix}$

$\begin{bmatrix} 0 \end{bmatrix}$

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

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

$\begin{bmatrix} 0 \end{bmatrix}$

$\begin{bmatrix} 0 \end{bmatrix}$

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

$\begin{bmatrix} 0 \end{bmatrix}$

Massive and massless spectra

(No particles)

(No particles)

Unitarity conditions

