

PSALTer results panel

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$$\int\int\int\int(\rho\varphi+h^{\alpha\beta}\mathcal{T}_{\alpha\beta}+\alpha_2.\partial_\alpha\varphi\partial^\alpha\varphi+\frac{1}{2}\alpha_1.(\partial_\beta h^\chi_\chi\partial^\beta h^\alpha_\alpha+2\partial_\alpha h^{\alpha\beta}\partial_\chi h^\chi_\beta-2\partial^\beta h^\alpha_\alpha\partial_\chi h^\chi_\beta-\partial_\chi h_{\alpha\beta}\partial^\chi h^{\alpha\beta}))[t,x,y,z]$$

$$dz\,dy\,dx\,dt$$

Wave operator

$$\begin{array}{c} \begin{array}{ccc} 0^+\varphi & 0^+h^\perp & 0^+h^\parallel \\ \hline 0^+\varphi\dagger & \alpha_2.k^2 & 0 & 0 \\ 0^+h^\perp\dagger & 0 & 0 & 0 \\ 0^+h^\parallel\dagger & 0 & 0 & \alpha_1.k^2 \end{array} & \begin{array}{c} 1^-h^\perp_\alpha \\ \hline 1^-h^\perp\dagger^\alpha & 0 \end{array} & \begin{array}{c} 2^+h^\parallel_{\alpha\beta} \\ \hline 2^+h^\parallel\dagger^{\alpha\beta} & -\frac{\alpha_1.k^2}{2} \end{array} \end{array}$$

Saturated propagator

$$\begin{array}{c} \begin{array}{ccc} 0^+\rho & 0^+\mathcal{T}^\perp & 0^+\mathcal{T}^\parallel \\ \hline 0^+\rho\dagger & \frac{1}{\alpha_2.k^2} & 0 & 0 \\ 0^+\mathcal{T}^\perp\dagger & 0 & 0 & 0 \\ 0^+\mathcal{T}^\parallel\dagger & 0 & 0 & \frac{1}{\alpha_1.k^2} \end{array} & \begin{array}{c} 1^-\mathcal{T}^\perp_\alpha \\ \hline 1^-\mathcal{T}^\perp\dagger^\alpha & 0 \end{array} & \begin{array}{c} 2^+\mathcal{T}^\parallel_{\alpha\beta} \\ \hline 2^+\mathcal{T}^\parallel\dagger^{\alpha\beta} & -\frac{2}{\alpha_1.k^2} \end{array} \end{array}$$

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+\mathcal{T}^\perp == 0$	$\partial_\beta\partial_\alpha\mathcal{T}^{\alpha\beta} == 0$	1
$1^-\mathcal{T}^\perp{}^\alpha == 0$	$\partial_\chi\partial_\beta\partial^\alpha\mathcal{T}^{\beta\chi} == \partial_\chi\partial^\chi\partial_\beta\mathcal{T}^{\alpha\beta}$	3
Total expected gauge generators:		4

Massive spectrum

(No particles)

Massless spectrum

Massless particle

Pole residue:	$\frac{1}{\alpha_2} > 0$
Polarisations:	1

Massless particle

Pole residue:	$-\frac{p^2}{\alpha_1} > 0$
Polarisations:	2

Unitarity conditions

$$\alpha_1.<0\ \&\&\ \alpha_2.>0$$