PSALTer results panel
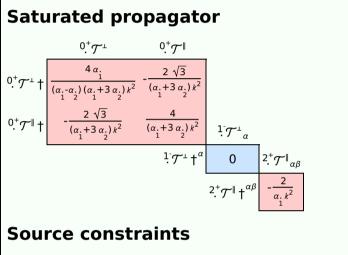
$$S == \iiiint (h^{\alpha\beta} \ \mathcal{T}_{\alpha\beta} - \alpha_2 \, \partial^\beta h^\alpha{}_\alpha \partial_\chi h_\beta{}^\chi + \tfrac{1}{2} \, \alpha_1 \, (\partial_\beta h^\chi{}_\chi \partial^\beta h^\alpha{}_\alpha + 2 \, \partial_\alpha h^{\alpha\beta} \partial_\chi h_\beta{}^\chi - \partial_\chi h_{\alpha\beta} \partial^\chi h^{\alpha\beta}))[t, x, y, z] \, dz \, dy \, dx \, dt$$

Wave operator

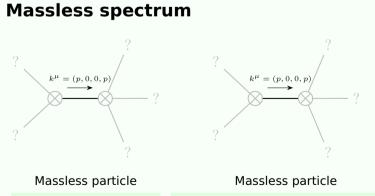|	${}^{0^+}\!h^\perp$	${}^{0^+}\!h^\parallel$		
${}^{0^+}\!h^\perp$ †	$(\alpha_1 - \alpha_2) k^2$	$\tfrac{1}{2} \sqrt{3} \, (\alpha_1 - \alpha_2) k^2$		
${}^{0^+}\!h^\parallel$ †	$\tfrac{1}{2} \sqrt{3} \, (\alpha_1 - \alpha_2) k^2$	$\alpha_1 k^2$	${}^{1^-}\!h^\perp{}_\alpha$	
${}^{1^-}\!h^\perp$ †${}^\alpha$			0	${}^{2^+}\!h^\parallel{}_{\alpha\beta}$
${}^{2^+}\!h^\parallel$ †${}^{\alpha\beta}$				$-\dfrac{\alpha_1 k^2}{2}$

Saturated propagator

	${}^{0^+}\!\mathcal{T}^\perp$	${}^{0^+}\!\mathcal{T}^\parallel$		
${}^{0^+}\!\mathcal{T}^\perp$ †	$\dfrac{4\,\alpha_1}{(\alpha_1-\alpha_2)(\alpha_1+3\,\alpha_2) k^2}$	$-\dfrac{2\sqrt{3}}{(\alpha_1+3\,\alpha_2) k^2}$		
${}^{0^+}\!\mathcal{T}^\parallel$ †	$-\dfrac{2\sqrt{3}}{(\alpha_1+3\,\alpha_2) k^2}$	$\dfrac{4}{(\alpha_1+3\,\alpha_2) k^2}$	${}^{1^-}\!\mathcal{T}^\perp{}_\alpha$	
${}^{1^-}\!\mathcal{T}^\perp$ †${}^\alpha$			0	${}^{2^+}\!\mathcal{T}^\parallel{}_{\alpha\beta}$
${}^{2^+}\!\mathcal{T}^\parallel$ †${}^{\alpha\beta}$				$-\dfrac{2}{\alpha_1 k^2}$

Source constraints

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

Massive spectrum

(No particles)

Massless spectrum

Massless particle

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

Massless particle

Pole residue:	$\dfrac{(\alpha_1{}^2 - 2\,\alpha_1\,\alpha_2 + 5\,\alpha_2{}^2) p^2}{\alpha_1\,(\alpha_1-\alpha_2)(\alpha_1+3\,\alpha_2)} > 0$
Polarisations:	1

Unitarity conditions

$$\alpha_1 < 0 \; \&\& \; (\alpha_2 < \alpha_1 \; || \; \alpha_2 > -\tfrac{\alpha_1}{3})$$