PSALTer results panel

$$\mathcal{S} == \iiiint(\rho\varphi + h^{\alpha\beta}\ \mathcal{T}_{\alpha\beta} + \tfrac{1}{2}\alpha_{2}\partial_\alpha\varphi\partial^\alpha\varphi + \tfrac{1}{8}\alpha_{1}(24(1+\varphi)\partial_\alpha\partial^\alpha\varphi - 8\partial_\alpha h^\beta{}_\beta\partial^\alpha\varphi + 8\partial^\alpha\varphi\partial_\beta h_\alpha{}^\beta - 4\partial_\beta\partial_\alpha h^{\alpha\beta} + 4\partial_\beta\partial^\beta h^\alpha{}_\alpha - \partial_\beta h^\chi{}_\chi\partial^\beta h^\alpha{}_\alpha + 2\partial^\beta h^\alpha{}_\alpha\partial_\chi h_\beta{}^\chi - 2\partial_\beta h_{\alpha\chi}\partial^\chi h^{\alpha\beta} + \partial_\chi h_{\alpha\beta}\partial^\chi h^{\alpha\beta}) +$$

$$\alpha_{5}(-4\partial_\beta\partial_\alpha h^\chi{}_\chi\partial^\beta\partial^\alpha\varphi - 8\partial_\beta\partial_\alpha\varphi\partial^\beta\partial^\alpha\varphi + 4\partial^\beta\partial^\alpha\varphi\partial_\chi\partial_\alpha h_\beta{}^\chi + 4\partial^\beta\partial^\alpha\varphi\partial_\chi\partial_\beta h_\alpha{}^\chi - 4\partial^\beta\partial^\alpha\varphi\partial_\chi\partial^\chi h_{\alpha\beta} + 4\partial_\alpha\partial^\alpha\varphi(2\partial_\beta\partial^\beta\varphi - \partial_\chi\partial_\beta h^{\beta\chi} + \partial_\chi\partial^\chi h^\beta{}_\beta) - \partial_\chi\partial_\beta h^\delta{}_\delta\partial^\chi\partial^\beta h^\alpha{}_\alpha - 2\partial^\chi\partial_\alpha h^{\alpha\beta}\partial_\delta\partial_\beta h_\chi{}^\delta - 2\partial^\chi\partial_\alpha h^{\alpha\beta}\partial_\delta\partial_\chi h_\beta{}^\delta + 4\partial^\chi\partial^\beta h^\alpha{}_\alpha\partial_\delta\partial_\chi h_\beta{}^\delta +$$

$$\partial_\beta\partial_\alpha h^{\alpha\beta}\partial_\delta\partial_\chi h^{\chi\delta} - 2\partial_\beta\partial^\beta h^\alpha{}_\alpha\partial_\delta\partial_\chi h^{\chi\delta} - \partial_\chi\partial^\chi h^{\alpha\beta}\partial_\delta\partial^\delta h_{\alpha\beta} + 4\partial^\chi\partial_\alpha h^{\alpha\beta}\partial_\delta\partial^\delta h_{\beta\chi} - 2\partial^\chi\partial^\beta h^\alpha{}_\alpha\partial_\delta\partial^\delta h_{\beta\chi} + \partial_\beta\partial^\beta h^\alpha{}_\alpha\partial_\delta\partial^\delta h^\chi{}_\chi + \partial_\beta\partial_\alpha h_{\chi\delta}\partial^\delta\partial^\chi h^{\alpha\beta} - \partial_\chi\partial_\beta h_{\alpha\delta}\partial^\delta\partial^\chi h^{\alpha\beta} - \partial_\delta\partial_\beta h_{\alpha\chi}\partial^\delta\partial^\chi h^{\alpha\beta} + \partial_\delta\partial_\chi h_{\alpha\beta}\partial^\delta\partial^\chi h^{\alpha\beta}))[t, x, y, z]\,dz\,dy\,dx\,dt$$

Wave operator

$$\begin{array}{c|ccc}
 & {}^{0^+}\varphi & {}^{0^+}h^\perp & {}^{0^+}h^\parallel \\ \hline
{}^{0^+}\varphi^\dagger & \frac{\alpha_2 k^2}{2} & 0 & -\frac{1}{2}\sqrt{3}\,\alpha_1 k^2 \\
{}^{0^+}h^{\perp\dagger} & 0 & 0 & 0 \\
{}^{0^+}h^{\parallel\dagger} & -\frac{1}{2}\sqrt{3}\,\alpha_1 k^2 & 0 & -\frac{\alpha_1 k^2}{4}
\end{array}$$

$$\begin{array}{c|c}
 & {}^{1^-}h^\perp{}_\alpha \\ \hline
{}^{1^-}h^\perp{}^{\dagger\alpha} & 0
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{2^+}h^\parallel{}_{\alpha\beta} \\ \hline
{}^{2^+}h^\parallel{}^{\dagger\alpha\beta} & \frac{\alpha_1 k^2}{8}
\end{array}$$

Saturated propagator

$$\begin{array}{c|ccc}
 & {}^{0^+}\rho & {}^{0^+}\mathcal{T}^\perp & {}^{0^+}\mathcal{T}^\parallel \\ \hline
{}^{0^+}\rho^\dagger & \frac{2}{(6\alpha_1+\alpha_2)k^2} & 0 & -\frac{4\sqrt{3}}{(6\alpha_1+\alpha_2)k^2} \\
{}^{0^+}\mathcal{T}^{\perp\dagger} & 0 & 0 & 0 \\
{}^{0^+}\mathcal{T}^{\parallel\dagger} & -\frac{4\sqrt{3}}{(6\alpha_1+\alpha_2)k^2} & 0 & -\frac{4\alpha_2}{\alpha_1(6\alpha_1+\alpha_2)k^2}
\end{array}$$

$$\begin{array}{c|c}
 & {}^{1^-}\mathcal{T}^\perp{}_\alpha \\ \hline
{}^{1^-}\mathcal{T}^\perp{}^{\dagger\alpha} & 0
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{2^+}\mathcal{T}^\parallel{}_{\alpha\beta} \\ \hline
{}^{2^+}\mathcal{T}^\parallel{}^{\dagger\alpha\beta} & \frac{8}{\alpha_1 k^2}
\end{array}$$

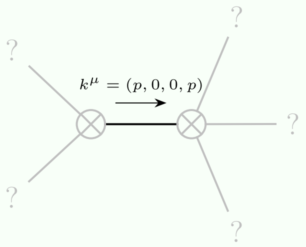
Source constraints

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

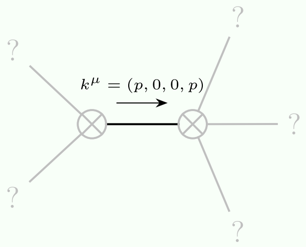
(No particles)

Massless spectrum



Massless particle

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



Massless particle

Pole residue:	$\frac{1+8p^2}{6\alpha_1+\alpha_2} > 0$
Polarisations:	1

Unitarity conditions

$\alpha_1 > 0$ && $\alpha_2 > -6\alpha_1$