PSALTer results panel $\mathcal{S} = \iiint [(h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \alpha \partial_{\alpha}h^{\alpha\beta} \partial_{\chi}h_{\beta}^{\ \chi} + \frac{1}{2}\alpha \partial_{\alpha}h^{\alpha}\partial_{\chi}h_{\beta}^{\ \chi} + \frac{1}{2}\alpha \partial_{\alpha}h^{\alpha}\partial_{\lambda}h_{\alpha}^{\ \chi} - 2\partial_{\beta}h^{\alpha}\partial_{\alpha}h_{\beta}^{\ \chi} - \partial_{\chi}h_{\alpha\beta}\partial_{\lambda}h^{\alpha\beta})][t, x, y, z] dz dy dx dt$ Saturated propagator $\begin{array}{c}
0^{+}\mathcal{T}^{\perp} \\
0^{+}\mathcal{T}^{\perp} + \overline{) \\
0^{+}\mathcal{T}^{\perp} + \overline{) \\
0 - \alpha_{1} + \alpha_{2} \setminus k^{2}} \quad 0 \\
0^{+}\mathcal{T}^{\parallel} + \overline{) \quad \frac{1}{\alpha_{1} \cdot k^{2}}} \quad 1^{+}\mathcal{T}^{\perp}_{\alpha} \\
1^{+}\mathcal{T}^{\perp} + \overline{) \quad \frac{2}{(\alpha_{1} - \alpha_{2}) \setminus k^{2}}} \quad 2^{+}\mathcal{T}^{\parallel}_{\alpha\beta} \\
2^{+}\mathcal{T}^{\parallel} + \overline{) \quad \frac{2}{\alpha_{1} \cdot k^{2}}}
\end{array}$ Source constraints (No source constraints) Massive spectrum (No particles) **Massless spectrum** Massless particle Massless particle Pole residue: $\left| -\frac{p^2}{\alpha_1} > 0 \right|$ Pole residue: Polarisations: 2 Polarisations: 2 Massless particle Massless particle Pole residue: $\frac{\left(\frac{2\alpha,-\alpha,)}{1}\frac{p^2}{2}\right)}{\frac{\alpha_1(\alpha,-\alpha,)}{1}\frac{\alpha_2(\alpha,-\alpha,)}{2}} > 0$ Pole residue: $\frac{\left(\frac{(-6\alpha_1 + \alpha_2)p^2}{1}\right)^2}{\frac{\alpha_1(\alpha_1 - \alpha_2)}{1}} > 0$ Polarisations: 1 Polarisations: 2 $k^{\mu} = (p, 0, 0, p)$ $k^{\mu} = (p, 0, 0, p)$ Massless particle Massless particle $\frac{(-2\alpha_{1}+\alpha_{2}-\sqrt{20\alpha_{1}^{2}-36\alpha_{1}\alpha_{2}+17\alpha_{2}^{2})p^{2}}}{\alpha_{1}(\alpha_{1}-\alpha_{2})}>0$ Pole residue: Polarisations: Polarisations: 1 $k^{\mu} = (\mathcal{E}, 0, 0, p)$ Quartic pole Massless particle $\frac{(-2\alpha_{.}+\alpha_{.}+\sqrt{20\alpha_{1}^{2}-36\alpha_{.}\alpha_{.}+17\alpha_{.}^{2}})p^{2}}{(-2\alpha_{.}+\alpha_{.}+\sqrt{20\alpha_{1}^{2}-36\alpha_{.}\alpha_{.}+17\alpha_{.}^{2}})p^{2}}>0$ $0 < \frac{\frac{\alpha \cdot p^{4}}{\alpha \cdot 2^{2} - \alpha \cdot \alpha \cdot 2}}{\frac{\alpha \cdot 2^{2} - \alpha \cdot \alpha \cdot 2}{1 \cdot 1 \cdot 2}} & \& \frac{\frac{\alpha \cdot p^{4}}{\alpha \cdot 2^{2} - \alpha \cdot \alpha \cdot 2}}{\frac{\alpha \cdot 2^{2} - \alpha \cdot \alpha \cdot 2}{1 \cdot 1 \cdot 1 \cdot 2}} > 0$ Pole residue: Pole residue: Polarisations: 2 Polarisations: 1 $k^{\mu} = (\mathcal{E}, 0, 0, p)$ Quartic pole Quartic pole Pole residue: $0 < \frac{1}{\alpha_1 (\alpha_1 - \alpha_1)}$ $0 < \frac{1}{\alpha_1(\alpha_1 - \alpha_2)} (6 \alpha_1 + 3 \alpha_2 + \sqrt{3})$ Pole residue: $(6\alpha_1 + 3\alpha_2 - \sqrt{3}\sqrt{(76\alpha_1^2 - 116)})$ $\sqrt{(76 \alpha_1^2 - 116 \alpha_1 \alpha_2 + 16 \alpha_1^2 \alpha_2^2 + 16 \alpha_1^2 \alpha_2^2)}$ 83 α .²)) p^4 && $\alpha_{1} \alpha_{2} + 83 \alpha_{2}^{2})$ $p^4 \&\& \frac{1}{\alpha_1 (\alpha_1 - \alpha_2)} (6 \alpha_1 + 3 \alpha_2 - \alpha_3)$ $\frac{1}{\alpha_{1}(\alpha_{1}-\alpha_{1})}(6\alpha_{1}+3\alpha_{1}+\sqrt{3}$ $\sqrt{(76 \alpha_{.1}^{2} - 116 \alpha_{.1} \alpha_{.1} + 1)^{2}}$ $\sqrt{3} \sqrt{(76 \alpha_1^2 - 116 \alpha_1^2)}$ 83 $\alpha_2^{(2)}$) $p^4 > 0$ $\alpha_{2} + 83 \alpha_{2}^{(2)}) p^{4} > 0$ Polarisations: 1 Polarisations: 1 Hexic pole $0 < \frac{(2\alpha_1 + \alpha_2)p^6}{\alpha_1(\alpha_1 - \alpha_2)} & & \frac{(2\alpha_1 + \alpha_1)p^6}{\alpha_1(\alpha_1 - \alpha_2)} > 0$ Pole residue: Polarisations: 1 **Unitarity conditions** (Demonstrably impossible)