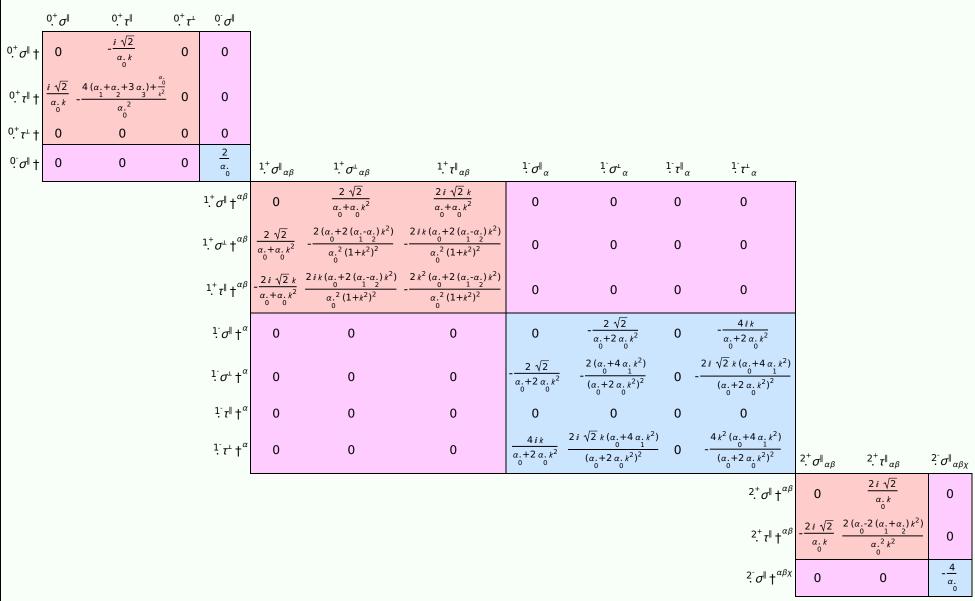
### **PSALTer results panel**

$$S = \iiint (\mathcal{A}^{\alpha\beta\chi} \ \sigma_{\alpha\beta\chi} + f^{\alpha\beta} \ \tau (\Delta + \mathcal{K})_{\alpha\beta} - \frac{1}{2} \alpha_{0} (\mathcal{A}_{\alpha\chi\beta} \ \mathcal{A}^{\alpha\beta\chi} + \mathcal{A}^{\alpha\beta}_{\alpha} \ \mathcal{A}^{\chi}_{\beta} + 2 \ f^{\alpha\beta} \ \partial_{\beta}\mathcal{A}^{\chi}_{\alpha} - 2 \ \partial_{\beta}\mathcal{A}^{\alpha\beta}_{\alpha} - 2 \ f^{\alpha\beta} \ \partial_{\chi}\mathcal{A}^{\chi}_{\alpha\beta} + 2 \ f^{\alpha}_{\alpha} \ \partial_{\chi}\mathcal{A}^{\beta\chi}_{\beta}) - \alpha_{1} (\partial_{\chi}\mathcal{A}^{\delta}_{\beta} \ \partial^{\chi}\mathcal{A}^{\alpha\beta}_{\alpha} + (\partial_{\alpha}\mathcal{A}^{\alpha\beta\chi} - 2 \ \partial^{\chi}\mathcal{A}^{\alpha\beta}_{\alpha}) \partial_{\delta}\mathcal{A}^{\beta}_{\beta} \ \partial^{\chi}\mathcal{A}^{\alpha\beta}_{\alpha} \partial_{\delta}\mathcal{A}^{\chi\delta}_{\alpha} - \alpha_{2} (\partial_{\chi}\mathcal{A}^{\zeta}_{\delta\zeta} \partial^{\delta}\mathcal{A}^{\beta\chi}_{\beta} + (\partial_{\beta}\mathcal{A}^{\beta\chi\delta} - 2 \ \partial^{\delta}\mathcal{A}^{\beta\chi}_{\beta}))[t, \, x, \, y, \, z] dz dy dx dt$$

## **Wave operator**

	$^{0,^{+}}_{\cdot}\mathscr{A}^{\parallel}$	$0.^+f^{\parallel}$	0.+ <i>f</i> <sup>⊥</sup>	$^{0}\mathcal{A}^{\parallel}$										
<sup>0,+</sup> <i>A</i> <sup>∥</sup> †	$\frac{1}{2}(\alpha_0 + 4(\alpha_1 + \alpha_2 + 3\alpha_3)k^2)$	$-\frac{i\alpha. k}{\sqrt{2}}$	0	0										
0.+ <i>f</i>    †	$\frac{i \alpha \cdot k}{\sqrt{2}}$	0	0	0										
0.+f <sup>1</sup> †	0	0	0	0										
<sup>0.</sup> 'Æ <sup>∥</sup> †	0	0	0	$\frac{\alpha}{2}$	${}^{1,^{+}}\mathcal{H}^{\parallel}{}_{\alpha\beta}$	$^{1.}^{+}\mathcal{A}^{\perp}{}_{lphaeta}$	$1^+ f^{\parallel}_{\alpha\beta}$	$^{1}\mathcal{H}^{\parallel}_{lpha}$	$^{1}\mathcal{H}^{\perp}{}_{lpha}$	$^{1}f^{\parallel}_{\alpha}$	$\frac{1}{2}f_{\alpha}^{\perp}$			
				$^{1^{+}}\mathcal{A}^{\parallel}\dagger^{lphaeta}$	$\frac{1}{4} (\alpha_0 + 2 (\alpha_1 - \alpha_1) k^2)$	$\frac{\alpha_{\cdot}}{2\sqrt{2}}$	$\frac{i \alpha. k}{2 \sqrt{2}}$	0	0	0	0			
				$^{1.}^{+}\mathcal{A}^{\scriptscriptstyle \perp}$ $\dagger^{^{lphaeta}}$	$\frac{\frac{\alpha_0}{0}}{2\sqrt{2}}$	0	0	0	0	0	0			
				$1.^+f^{\parallel} \uparrow^{\alpha\beta}$	$-\frac{i\alpha.k}{2\sqrt{2}}$	0	0	0	0	0	0			
				$^{1}\mathcal{A}^{\parallel}$ † $^{lpha}$	0	0	0	$\frac{\alpha_0}{4} + \alpha_1 k^2$	$\frac{\alpha_0}{2\sqrt{2}}$	0	$-\frac{1}{2}i\alpha_{0}k$			
				$\frac{1}{2}\mathcal{F}^{\perp} \uparrow^{\alpha}$	0	0	0	$-\frac{\alpha_0}{2\sqrt{2}}$	0	0	0			
				$^{1}f^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0			
				$\frac{1}{2}f^{\perp}\uparrow^{\alpha}$	0	0	0	$\frac{i\alpha.k}{2}$	0	0	0	$^{2^{+}}\mathcal{A}^{\parallel}{}_{lphaeta}$	$2^+_{\cdot}f^{\parallel}_{\alpha\beta}$	$\mathcal{F}^{-}_{\alpha\beta\lambda}$
											$^{2^{+}}\mathcal{A}^{\parallel}$ † $^{\alpha\beta}$	$\frac{1}{4} \left( -\alpha_{.} + 2 \left( \alpha_{.} + \alpha_{.} \right) k^{2} \right)$	$\frac{i \alpha. k}{0}$ $2 \sqrt{2}$	0
											$^{2.}f^{\parallel}\dagger^{\alpha\beta}$	$-\frac{i\alpha.k}{2\sqrt{2}}$	0	0
											$\mathcal{F}^{\parallel}$ † $^{\alpha\beta\chi}$	0	0	$-\frac{\alpha}{4}$

#### **Saturated propagator**



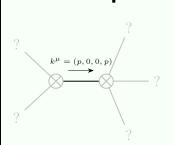
## Source constraints

Spin-parity form	Covariant form	Multiplicities
$0.^{+}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau \left(\Delta + \mathcal{K}\right)^{\alpha\beta} == 0$	1
$\frac{2ik  1  \sigma^{\perp}^{\alpha} + 1  \tau^{\perp}^{\alpha} == 0}{$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau \left(\Delta + \mathcal{K}\right)^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau \left(\Delta + \mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3
$\frac{1}{1} r^{\parallel^{\alpha}} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\beta\alpha}$	3
$\overline{i k  1^+_{\cdot} \sigma^{\perp}^{\alpha\beta} + 1^+_{\cdot} \tau^{\parallel}^{\alpha\beta} == 0}$	$\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} = = \partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\beta\alpha} + 2\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta} = = \partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} = = \partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} = = \partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\chi} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^$	3
Total expected gauge	generators:	10

### **Massive spectrum**

(No particles)

# Massless spectrum



Massless particle

Pole residue:	$\left \frac{p^2}{\alpha_{\cdot}^2} > 0\right $
Polarisations:	2

## **Unitarity conditions**