PSALTer results panel

$$\mathcal{S} == \iiiint (\mathcal{R}^{\alpha\beta\chi}{}_{\alpha\beta\chi} + f^{\alpha\beta}{}_{\alpha\beta} \tau (\Delta+\mathcal{K})_{\alpha\beta} + \frac{1}{3} r_{\cdot 3} (4 \partial_\beta \mathcal{R}_{\alpha\iota\theta}{}^{\alpha\beta\theta} - 2 \partial_\beta \mathcal{R}_{\alpha\theta\iota}{}^{\alpha\beta\theta} + 2 \partial_\beta \mathcal{R}_{\iota\theta\alpha}{}^{\alpha\beta\theta} - \partial_\iota \mathcal{R}_{\alpha\beta\theta}{}^{\alpha\beta\theta} + \partial_\theta \mathcal{R}_{\alpha\beta\iota}{}^{\alpha\beta\theta} - 2 \partial_\theta \mathcal{R}_{\alpha\iota\beta}{}^{\alpha\beta\theta}) \partial^\theta \mathcal{R}^{\alpha\beta\iota}{}_{\alpha\beta}{}^{\theta} - \frac{1}{2} r_{\cdot 3} (\partial_\beta \mathcal{R}_{\iota}{}^{\theta}{}_{\theta}{}^{\alpha\beta} \partial^\iota \mathcal{R}^{\alpha\beta}{}_{\alpha\beta}{}^{\theta} + \partial_\iota \mathcal{R}_{\beta}{}^{\theta}{}_{\theta}{}^{\alpha\beta} \partial^\iota \mathcal{R}^{\alpha\beta}{}_{\alpha\beta}{}^{\theta} + \partial_\alpha \mathcal{R}^{\alpha\beta\iota}{}_{\beta}{}^{\theta} \partial_\theta \mathcal{R}_{\beta}{}^{\theta}{}_{\iota} - 2 \partial^\iota \mathcal{R}^{\alpha\beta}{}_{\alpha\beta}{}^{\theta} \partial_\theta \mathcal{R}_{\beta}{}^{\theta}{}_{\iota} + \partial_\alpha \mathcal{R}^{\alpha\beta\iota}{}_{\iota}{}^{\theta} \partial_\theta \mathcal{R}_{\beta}{}^{\alpha}{}_{\beta}{}^{\theta} - 2 \partial^\iota \mathcal{R}^{\alpha\beta}{}_{\alpha\iota}{}^{\theta} \partial_\theta \mathcal{R}_{\beta}{}^{\alpha}{}_{\beta}{}^{\theta} + 8 \partial_\beta \mathcal{R}_{\iota\theta\alpha}{}^{\alpha\beta\iota} \partial^\theta \mathcal{R}^{\alpha\beta\iota}{}_{\alpha\beta}{}^{\theta}) + r_{\cdot 5} (\partial_\iota \mathcal{R}_{\theta}{}^{\kappa}{}_{\kappa}{}^{\theta\alpha\iota}{}_{\alpha} \partial^\theta \mathcal{R}^{\alpha\iota}{}_{\alpha\beta}{}^{\kappa} - \partial_\theta \mathcal{R}_{\iota}{}^{\kappa}{}_{\kappa}{}^{\theta\alpha\iota}{}_{\alpha} \partial^\theta \mathcal{R}^{\alpha\iota}{}_{\alpha\beta}{}^{\kappa} - (\partial_\alpha \mathcal{R}^{\alpha\iota\theta}{}_{\beta}{}^{\kappa} - 2 \partial^\theta \mathcal{R}^{\alpha\iota}{}_{\alpha\beta}{}^{\kappa}) (\partial_\kappa \mathcal{R}_{\iota}{}^{\kappa}{}_{\theta}{}^{\alpha\beta} - \partial_\kappa \mathcal{R}_{\theta}{}^{\kappa}{}_{\iota}{}^{\alpha\beta}))) [t, x, y, z] dz dy dx dt$$

Wave operator

	$0^+_\cdot \mathcal{R}^\parallel$	$0^+_\cdot f^\parallel$	$0^+_\cdot f^\perp$	$0^-_\cdot \mathcal{R}^\parallel$	$1^+_\cdot \mathcal{R}^\parallel{}_{\alpha\beta}$	$1^+_\cdot \mathcal{R}^\perp{}_{\alpha\beta}$	$1^+_\cdot f^\parallel{}_{\alpha\beta}$	$1^-_\cdot \mathcal{R}^\parallel{}_{\alpha}$	$1^-_\cdot \mathcal{R}^\perp{}_{\alpha}$	$1^-_\cdot f^\parallel{}_{\alpha}$	$1^-_\cdot f^\perp{}_{\alpha}$	$2^+_\cdot \mathcal{R}^\parallel{}_{\alpha\beta}$	$2^+_\cdot f^\parallel{}_{\alpha\beta}$	$2^-_\cdot \mathcal{R}^\parallel{}_{\alpha\beta\chi}$
$0^+_\cdot \mathcal{R}^\parallel \dagger$	0	0	0	0										
$0^+_\cdot f^\parallel \dagger$	0	0	0	0										
$0^+_\cdot f^\perp \dagger$	0	0	0	0										
$0^-_\cdot \mathcal{R}^\parallel \dagger$	0	0	0	$k^2 r_{\cdot 2}$										
$1^+_\cdot \mathcal{R}^\parallel \dagger^{\alpha\beta}$					$k^2 (2 r_{\cdot 3} + r_{\cdot 5})$	0	0	0	0	0	0			
$1^+_\cdot \mathcal{R}^\perp \dagger^{\alpha\beta}$					0	0	0	0	0	0	0			
$1^+_\cdot f^\parallel \dagger^{\alpha\beta}$					0	0	0	0	0	0	0			
$1^-_\cdot \mathcal{R}^\parallel \dagger^{\alpha}$					0	0	0	$\frac{1}{2} k^2 (r_{\cdot 3} + 2 r_{\cdot 5})$	0	0	0			
$1^-_\cdot \mathcal{R}^\perp \dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_\cdot f^\parallel \dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_\cdot f^\perp \dagger^{\alpha}$					0	0	0	0	0	0	0			
$2^+_\cdot \mathcal{R}^\parallel \dagger^{\alpha\beta}$												$-\frac{3 k^2 r_{\cdot 3}}{2}$	0	0
$2^+_\cdot f^\parallel \dagger^{\alpha\beta}$												0	0	0
$2^-_\cdot \mathcal{R}^\parallel \dagger^{\alpha\beta\chi}$												0	0	0

Saturated propagator

	$0^+_\cdot \sigma^\parallel$	$0^+_\cdot \tau^\parallel$	$0^+_\cdot \tau^\perp$	$0^-_\cdot \sigma^\parallel$	$1^+_\cdot \sigma^\parallel{}_{\alpha\beta}$	$1^+_\cdot \sigma^\perp{}_{\alpha\beta}$	$1^+_\cdot \tau^\parallel{}_{\alpha\beta}$	$1^-_\cdot \sigma^\parallel{}_{\alpha}$	$1^-_\cdot \sigma^\perp{}_{\alpha}$	$1^-_\cdot \tau^\parallel{}_{\alpha}$	$1^-_\cdot \tau^\perp{}_{\alpha}$	$2^+_\cdot \sigma^\parallel{}_{\alpha\beta}$	$2^+_\cdot \tau^\parallel{}_{\alpha\beta}$	$2^-_\cdot \sigma^\parallel{}_{\alpha\beta\chi}$
$0^+_\cdot \sigma^\parallel \dagger$	0	0	0	0										
$0^+_\cdot \tau^\parallel \dagger$	0	0	0	0										
$0^+_\cdot \tau^\perp \dagger$	0	0	0	0										
$0^-_\cdot \sigma^\parallel \dagger$	0	0	0	$\frac{1}{k^2 r_{\cdot 2}}$										
$1^+_\cdot \sigma^\parallel \dagger^{\alpha\beta}$					$\frac{1}{k^2 (2 r_{\cdot 3} + r_{\cdot 5})}$	0	0	0	0	0	0			
$1^+_\cdot \sigma^\perp \dagger^{\alpha\beta}$					0	0	0	0	0	0	0			
$1^+_\cdot \tau^\parallel \dagger^{\alpha\beta}$					0	0	0	0	0	0	0			
$1^-_\cdot \sigma^\parallel \dagger^{\alpha}$					0	0	0	$\frac{2}{k^2 (r_{\cdot 3} + 2 r_{\cdot 5})}$	0	0	0			
$1^-_\cdot \sigma^\perp \dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_\cdot \tau^\parallel \dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_\cdot \tau^\perp \dagger^{\alpha}$					0	0	0	0	0	0	0			
$2^+_\cdot \sigma^\parallel \dagger^{\alpha\beta}$												$-\frac{2}{3 k^2 r_{\cdot 3}}$	0	0
$2^+_\cdot \tau^\parallel \dagger^{\alpha\beta}$												0	0	0
$2^-_\cdot \sigma^\parallel \dagger^{\alpha\beta\chi}$												0	0	0

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+_\cdot \tau^\perp == 0$	$\partial_\beta \partial_\alpha \tau (\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$0^+_\cdot \tau^\parallel == 0$	$\partial_\beta \partial_\alpha \tau (\Delta+\mathcal{K})^{\alpha\beta} == \partial_\beta \partial^\beta \tau (\Delta+\mathcal{K})^{\alpha}{}_{\alpha}$	1
$0^+_\cdot \sigma^\parallel == 0$	$\partial_\beta \sigma^{\alpha}{}_{\alpha}{}^{\beta} == 0$	1
$1^-_\cdot \tau^\perp{}^\alpha == 0$	$\partial_\chi \partial_\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \tau (\Delta+\mathcal{K})^{\alpha\beta}$	3
$1^-_\cdot \tau^\parallel{}^\alpha == 0$	$\partial_\chi \partial_\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \tau (\Delta+\mathcal{K})^{\beta\alpha}$	3
$1^-_\cdot \sigma^\perp{}^\alpha == 0$	$\partial_\chi \partial_\beta \sigma^{\beta\alpha\chi} == 0$	3
$1^+_\cdot \tau^\parallel{}^{\alpha\beta} == 0$	$\partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} + \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\chi\alpha} + \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\alpha\beta} == \partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\beta} + \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\alpha\chi} + \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\beta\alpha}$	3
$1^+_\cdot \sigma^\perp{}^{\alpha\beta} == 0$	$\partial_\delta \partial_\chi \partial^\alpha \sigma^{\chi\beta\delta} + \partial_\delta \partial^\delta \partial_\chi \sigma^{\chi\alpha\beta} == \partial_\delta \partial_\chi \partial^\beta \sigma^{\chi\alpha\delta}$	3
$2^-_\cdot \sigma^\parallel{}^{\alpha\beta\chi} == 0$	$3 \partial_\epsilon \partial_\delta \partial^\chi \partial^\alpha \sigma^{\delta\beta\epsilon} + 3 \partial_\epsilon \partial^\epsilon \partial^\chi \partial^\alpha \sigma^{\delta\beta}{}_{\delta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\beta \sigma^{\alpha\chi\delta} + 4 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\beta \sigma^{\chi\alpha\delta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\beta \sigma^{\delta\alpha\chi} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\chi \sigma^{\beta\alpha\delta} + 4 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\chi \sigma^{\delta\alpha\beta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \sigma^{\alpha\beta\chi} + 3 \eta^{\beta\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial^\alpha \sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3 \eta^{\alpha\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial_\delta \sigma^{\delta\beta\epsilon} + 3 \eta^{\beta\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial^\epsilon \sigma^{\delta\alpha}{}_{\delta} == 3 \partial_\epsilon \partial_\delta \partial^\chi \partial^\beta \sigma^{\delta\alpha\epsilon} + 3 \partial_\epsilon \partial^\epsilon \partial^\chi \partial^\beta \sigma^{\delta\alpha}{}_{\delta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\alpha \sigma^{\beta\chi\delta} + 4 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\alpha \sigma^{\chi\beta\delta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\alpha \sigma^{\delta\beta\chi} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\chi \sigma^{\alpha\beta\delta} + 2 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \sigma^{\beta\alpha\chi} + 4 \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \sigma^{\chi\alpha\beta} + 3 \eta^{\alpha\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial^\beta \sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3 \eta^{\beta\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial_\delta \sigma^{\delta\alpha\epsilon} + 3 \eta^{\alpha\chi} \partial_\phi \partial^\phi \partial_\epsilon \partial^\epsilon \sigma^{\delta\beta}{}_{\delta}$	5
$2^+_\cdot \tau^\parallel{}^{\alpha\beta} == 0$	$4 \partial_\delta \partial_\chi \partial^\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\delta} + 2 \partial_\delta \partial^\delta \partial^\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\alpha\beta} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\beta\alpha} + 2 \eta^{\alpha\beta} \partial_\epsilon \partial^\epsilon \partial_\delta \partial_\chi \tau (\Delta+\mathcal{K})^{\chi\delta} == 3 \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\beta} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\alpha\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\chi\alpha} + 2 \eta^{\alpha\beta} \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:		28

Massive spectrum

(No particles)

Massless spectrum

Massless particle

Pole residue:	$-\frac{2}{r_{\cdot 3}} + \frac{3}{2 r_{\cdot 3} + r_{\cdot 5}} - \frac{16}{r_{\cdot 3} + 2 r_{\cdot 5}} > 0$
Polarisations:	2

Unitarity conditions

$$(r_{\cdot 3} < 0 \;\&\&\; (r_{\cdot 5} < -\frac{r_{\cdot 3}}{2} \;||\; r_{\cdot 5} > -2 r_{\cdot 3})) \;||\; (r_{\cdot 3} > 0 \;\&\&\; -2 r_{\cdot 3} < r_{\cdot 5} < -\frac{r_{\cdot 3}}{2})$$