

PSALTer results panel

$$S = \iiint \left(\frac{1}{6} \left(-4 t_{\dot{3}} \mathcal{A}^{\alpha'}_{\alpha} \mathcal{A}_{,\theta}^{\theta} + 6 \mathcal{A}^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}{}^{\tau} (\Delta + \mathcal{K})_{\alpha\beta}{}^{\tau} + 8 t_{\dot{3}} \mathcal{A}_{\alpha}^{\theta} \partial_{\tau} f^{\alpha'} - 3 r_{\dot{3}} \partial_{\beta} \mathcal{A}_{,\theta}^{\theta} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} - 3 r_{\dot{3}} \partial_{\tau} \mathcal{A}_{\beta}^{\theta} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} - 8 t_{\dot{3}} \mathcal{A}_{,\theta}^{\theta} \partial' f^{\alpha}_{\alpha} + \right. \right. \\ \left. \left. 4 t_{\dot{3}} \partial_{\tau} f^{\theta}_{\theta} \partial' f^{\alpha}_{\alpha} - 3 r_{\dot{3}} \partial_{\alpha} \mathcal{A}^{\alpha\beta'} \partial_{\theta} \mathcal{A}_{\beta}^{\theta} + 6 r_{\dot{3}} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} \partial_{\theta} \mathcal{A}_{\beta}^{\theta} - 3 r_{\dot{3}} \partial_{\alpha} \mathcal{A}^{\alpha\beta'} \partial_{\theta} \mathcal{A}_{,\beta}^{\theta} + 6 r_{\dot{3}} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} \partial_{\theta} \mathcal{A}_{,\beta}^{\theta} + 4 t_{\dot{3}} \partial_{\tau} f^{\alpha'} \partial_{\theta} f^{\theta}_{\alpha} - \right. \right. \\ \left. \left. 8 t_{\dot{3}} \partial' f^{\alpha}_{\alpha} \partial_{\theta} f^{\theta}_{,\theta} + 8 r_{\dot{2}} \partial_{\beta} \mathcal{A}_{\alpha\tau} \partial^{\theta} \mathcal{A}^{\alpha\beta'} - 4 r_{\dot{2}} \partial_{\beta} \mathcal{A}_{\alpha\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta'} + 4 r_{\dot{2}} \partial_{\beta} \mathcal{A}_{,\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta'} - 24 r_{\dot{3}} \partial_{\beta} \mathcal{A}_{,\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta'} - \right. \right. \\ \left. \left. 2 r_{\dot{2}} \partial_{\tau} \mathcal{A}_{\alpha\beta\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta'} + 2 r_{\dot{2}} \partial_{\theta} \mathcal{A}_{\alpha\beta\tau} \partial^{\theta} \mathcal{A}^{\alpha\beta'} - 4 r_{\dot{2}} \partial_{\theta} \mathcal{A}_{\alpha\tau\beta} \partial^{\theta} \mathcal{A}^{\alpha\beta'} + 6 r_{\dot{5}} \partial_{\tau} \mathcal{A}_{\theta}^{\kappa} \partial^{\theta} \mathcal{A}^{\alpha'}_{\alpha} - 6 r_{\dot{5}} \partial_{\theta} \mathcal{A}_{,\kappa}^{\kappa} \partial^{\theta} \mathcal{A}^{\alpha'}_{\alpha} - \right. \right. \\ \left. \left. 6 r_{\dot{5}} \partial_{\alpha} \mathcal{A}^{\alpha\tau\theta} \partial_{\kappa} \mathcal{A}_{,\theta}^{\kappa} + 12 r_{\dot{5}} \partial^{\theta} \mathcal{A}^{\alpha'}_{\alpha} \partial_{\kappa} \mathcal{A}_{,\theta}^{\kappa} + 6 r_{\dot{5}} \partial_{\alpha} \mathcal{A}^{\alpha\tau\theta} \partial_{\kappa} \mathcal{A}_{\theta}^{\kappa} - 12 r_{\dot{5}} \partial^{\theta} \mathcal{A}^{\alpha'}_{\alpha} \partial_{\kappa} \mathcal{A}_{\theta}^{\kappa} \right) \right) [t, x, y, z] dz dy dx dt$$

Wave operator

$\overset{0}{\cdot}\mathcal{A}^{\parallel}$	$\overset{0}{\cdot}f^{\parallel}$	$\overset{0}{\cdot}f^{\perp}$	$\overset{0}{\cdot}\mathcal{A}^{\parallel}$												
$\overset{0}{\cdot}\mathcal{A}^{\parallel} \dagger$	$t_{\dot{3}}$	$-i \sqrt{2} k t_{\dot{3}}$	0	0											
$\overset{0}{\cdot}f^{\parallel} \dagger$	$i \sqrt{2} k t_{\dot{3}}$	$2 k^2 t_{\dot{3}}$	0	0											
$\overset{0}{\cdot}f^{\perp} \dagger$	0	0	0	0											
$\overset{0}{\cdot}\mathcal{A}^{\parallel} \dagger$	0	0	0	$k^2 r_{\dot{2}}$	$\overset{1}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\mathcal{A}^{\perp}_{\alpha\beta}$	$\overset{1}{\cdot}f^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\mathcal{A}^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\mathcal{A}^{\perp}_{\alpha}$	$\overset{1}{\cdot}f^{\parallel}_{\alpha}$	$\overset{1}{\cdot}f^{\perp}_{\alpha}$				
				$\overset{1}{\cdot}\mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$k^2 \left(2 r_{\dot{3}} + r_{\dot{5}} \right)$	0	0	0	0	0	0				
				$\overset{1}{\cdot}\mathcal{A}^{\perp} \dagger^{\alpha\beta}$	0	0	0	0	0	0	0				
				$\overset{1}{\cdot}f^{\parallel} \dagger^{\alpha\beta}$	0	0	0	0	0	0	0				
				$\overset{1}{\cdot}\mathcal{A}^{\parallel} \dagger^{\alpha}$	0	0	0	$k^2 \left(\frac{r_{\dot{3}}}{2} + r_{\dot{5}} \right) + \frac{2 t_{\dot{3}}}{3}$	$-\frac{\sqrt{2} t_{\dot{3}}}{3}$	0	$-\frac{2}{3} i k t_{\dot{3}}$				
				$\overset{1}{\cdot}\mathcal{A}^{\perp} \dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2} t_{\dot{3}}}{3}$	$\frac{t_{\dot{3}}}{3}$	0	$\frac{1}{3} i \sqrt{2} k t_{\dot{3}}$				
				$\overset{1}{\cdot}f^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0				
				$\overset{1}{\cdot}f^{\perp} \dagger^{\alpha}$	0	0	0	$\frac{2 i k t_{\dot{3}}}{3}$	$-\frac{1}{3} i \sqrt{2} k t_{\dot{3}}$	0	$\frac{2 k^2 t_{\dot{3}}}{3}$	$\overset{2}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}f^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta\chi}$	
												$\overset{2}{\cdot}\mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$-\frac{3 k^2 r_{\dot{3}}}{2}$	0	0
												$\overset{2}{\cdot}f^{\parallel} \dagger^{\alpha\beta}$	0	0	0
												$\overset{2}{\cdot}\mathcal{A}^{\parallel} \dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

$\overset{0}{\cdot}\sigma^{\parallel}$	$\overset{0}{\cdot}\tau^{\parallel}$	$\overset{0}{\cdot}\tau^{\perp}$	$\overset{0}{\cdot}\sigma^{\parallel}$									
$\overset{0}{\cdot}\sigma^{\parallel} \dagger$	$\frac{1}{\left(1+2\,k^2\right)^2 t_{\dot{3}}} - \frac{i\,\sqrt{2}\,k}{\left(1+2\,k^2\right)^2 t_{\dot{3}}}$	0	0									
$\overset{0}{\cdot}\tau^{\parallel} \dagger$	$\frac{i\,\sqrt{2}\,k}{\left(1+2\,k^2\right)^2 t_{\dot{3}}} - \frac{2\,k^2}{\left(1+2\,k^2\right)^2 t_{\dot{3}}}$	0	0									
$\overset{0}{\cdot}\tau^{\perp} \dagger$	0	0	0									
$\overset{0}{\cdot}\sigma^{\parallel} \dagger$	0	0	0	$\frac{1}{k^2 r_{\dot{2}}}$	$\overset{1}{\cdot}\sigma^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\sigma^{\perp}_{\alpha\beta}$	$\overset{1}{\cdot}\tau^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\sigma^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\sigma^{\perp}_{\alpha}$	$\overset{1}{\cdot}\tau^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\tau^{\perp}_{\alpha}$	
				$\overset{1}{\cdot}\sigma^{\parallel} \dagger^{\alpha\beta}$	$\frac{1}{k^2 \left(2\,r_{\dot{3}}+r_{\dot{5}}\right)}$	0	0	0	0	0	0	
				$\overset{1}{\cdot}\sigma^{\perp} \dagger^{\alpha\beta}$	0	0	0	0	0	0	0	
				$\overset{1}{\cdot}\tau^{\parallel} \dagger^{\alpha\beta}$	0	0	0	0	0	0	0	
				$\overset{1}{\cdot}\sigma^{\parallel} \dagger^{\alpha}$	0	0	0	$\frac{2}{k^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)}$	$\frac{2\,\sqrt{2}}{k^2 \left(1+2\,k^2\right) \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)}$	0	$\frac{4\,i}{k \left(1+2\,k^2\right) \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)}$	
				$\overset{1}{\cdot}\sigma^{\perp} \dagger^{\alpha}$	0	0	0	$\frac{2\,\sqrt{2}}{k^2 \left(1+2\,k^2\right) \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)}$	$\frac{3\,k^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)+4\,t_{\dot{3}}}{\left(k+2\,k^3\right)^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right) t_{\dot{3}}}$	0	$\frac{i\,\sqrt{2} \left(3\,k^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)+4\,t_{\dot{3}}\right)}{k \left(1+2\,k^2\right)^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right) t_{\dot{3}}}$	
				$\overset{1}{\cdot}\tau^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0	
				$\overset{1}{\cdot}\tau^{\perp} \dagger^{\alpha}$	0	0	0	$-\frac{4\,i}{k \left(1+2\,k^2\right) \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)}$	$-\frac{i\,\sqrt{2} \left(3\,k^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)+4\,t_{\dot{3}}\right)}{k \left(1+2\,k^2\right)^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right) t_{\dot{3}}}$	0	$\frac{6\,k^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right)+8\,t_{\dot{3}}}{\left(1+2\,k^2\right)^2 \left(r_{\dot{3}}+2\,r_{\dot{5}}\right) t_{\dot{3}}}$	
										$\overset{2}{\cdot}\sigma^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\tau^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\sigma^{\parallel}_{\alpha\beta\chi}$
										$\overset{2}{\cdot}\sigma^{\parallel} \dagger^{\alpha\beta}$	$-\frac{2}{3\,k^2 r_{\dot{3}}}$	0
										$\overset{2}{\cdot}\tau^{\parallel} \dagger^{\alpha\beta}$	0	0
										$\overset{2}{\cdot}\sigma^{\parallel} \dagger^{\alpha\beta\chi}$	0	0

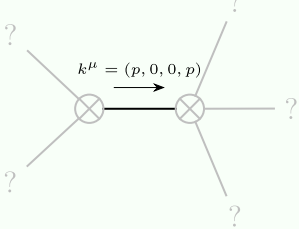
Source constraints

Spin-parity form	Covariant form	Multiplicities
$\overset{0}{\cdot}\tau^{\perp} == 0$	$\partial_{\beta} \partial_{\alpha \tau} (\Delta + \mathcal{K})^{\alpha\beta} == 0$	1
$-2 i k \overset{0}{\cdot}\sigma^{\parallel} + \overset{0}{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta} \partial_{\alpha \tau} (\Delta + \mathcal{K})^{\alpha\beta} == \partial_{\beta} \partial^{\beta}{}_{\tau} (\Delta + \mathcal{K})^{\alpha}{}_{\alpha} + 2 \partial_{\chi} \partial^{\chi} \partial_{\beta} \sigma^{\alpha}{}^{\beta}_{\alpha}$	1
$2 i k \overset{1}{\cdot}\sigma^{\perp\alpha} + \overset{1}{\cdot}\tau^{\perp\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta \tau} (\Delta + \mathcal{K})^{\alpha\beta} + 2 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial_{\beta} \sigma^{\beta\alpha\chi}$	3
$\overset{1}{\cdot}\tau^{\parallel\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta \tau} (\Delta + \mathcal{K})^{\beta\alpha}$	3
$\overset{1}{\cdot}\tau^{\parallel\alpha\beta} == 0$	$\partial_{\chi} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\beta\chi} + \partial_{\chi} \partial^{\beta}{}_{\tau} (\Delta + \mathcal{K})^{\chi\alpha} + \partial_{\chi} \partial^{\chi}{}_{\tau} (\Delta + \mathcal{K})^{\alpha\beta} == \partial_{\chi} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\chi\beta} + \partial_{\chi} \partial^{\beta}{}_{\tau} (\Delta + \mathcal{K})^{\alpha\chi} + \partial_{\chi} \partial^{\chi}{}_{\tau} (\Delta + \mathcal{K})^{\beta\alpha}$	3
$\overset{1}{\cdot}\sigma^{\perp\alpha\beta} == 0$	$\partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi\beta\delta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\chi\alpha\beta} == \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi\alpha\delta}$	3
$\overset{2}{\cdot}\sigma^{\parallel\alpha\beta\chi} == 0$	$3 \partial_{\epsilon} \partial_{\delta} \partial^{\chi} \partial^{\alpha} \sigma^{\delta\beta\epsilon} + 3 \partial_{\epsilon} \partial^{\epsilon} \partial^{\chi} \partial^{\alpha} \sigma^{\delta\beta}{}_{\delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\alpha\chi\delta} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\chi\alpha\delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\delta\alpha\chi} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\beta\alpha\delta} +$ $4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\delta\alpha\beta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\alpha\beta\chi} + 3 \eta^{\beta\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\alpha} \sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3 \eta^{\alpha\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial_{\delta} \sigma^{\delta\beta\epsilon} + 3 \eta^{\beta\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\epsilon} \sigma^{\delta\alpha}{}_{\delta} ==$ $3 \partial_{\epsilon} \partial_{\delta} \partial^{\chi} \partial^{\beta} \sigma^{\delta\alpha\epsilon} + 3 \partial_{\epsilon} \partial^{\epsilon} \partial^{\chi} \partial^{\beta} \sigma^{\delta\alpha}{}_{\delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\beta\chi\delta} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\chi\beta\delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\delta\beta\chi} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\alpha\beta\delta} +$ $2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\beta\alpha\chi} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\chi\alpha\beta} + 3 \eta^{\alpha\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\beta} \sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3 \eta^{\beta\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial_{\delta} \sigma^{\delta\alpha\epsilon} + 3 \eta^{\alpha\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\epsilon} \sigma^{\delta\beta}{}_{\delta}$	5
$\overset{2}{\cdot}\tau^{\parallel\alpha\beta} == 0$	$4 \partial_{\delta} \partial_{\chi} \partial^{\beta} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\chi\delta} + 2 \partial_{\delta} \partial^{\delta} \partial^{\beta} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\chi}{}_{\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi}{}_{\tau} (\Delta + \mathcal{K})^{\alpha\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi}{}_{\tau} (\Delta + \mathcal{K})^{\beta\alpha} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi \tau} (\Delta + \mathcal{K})^{\chi\delta} ==$ $3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\beta\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha}{}_{\tau} (\Delta + \mathcal{K})^{\chi\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta}{}_{\tau} (\Delta + \mathcal{K})^{\alpha\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta}{}_{\tau} (\Delta + \mathcal{K})^{\chi\alpha} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta}{}_{\tau} (\Delta + \mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:		24

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{26}{r_{\dot{3}}} + \frac{39}{2 r_{\dot{3}} + r_{\dot{5}}} - \frac{216}{r_{\dot{3}} + 2 r_{\dot{5}}} > 0$
Polarisations:	2

Unitarity conditions

$$\left(r_{\dot{3}} < 0 \ \&\& \left(r_{\dot{5}} < -\frac{r_{\dot{3}}}{2} \parallel r_{\dot{5}} > -2 r_{\dot{3}} \right) \right) \parallel \left(r_{\dot{3}} > 0 \ \&\& -2 r_{\dot{3}} < r_{\dot{5}} < -\frac{r_{\dot{3}}}{2} \right)$$