PSALTer results panel

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

Wave operator

	$0^+_{\cdot}\mathcal{A}^{\parallel}$	$0^+_{\cdot}f^{\parallel}$	$0^+_{\cdot}f^{\perp}$	$0^-_{\cdot}\mathcal{A}^{\parallel}$
$0^+_{\cdot}\mathcal{A}^{\parallel}\dagger$	$t_{\cdot 3}$	$-i\sqrt{2}\,k t_{\cdot 3}$	0	0
$0^+_{\cdot}f^{\parallel}\dagger$	$i\sqrt{2}\,k t_{\cdot 3}$	$2k^2 t_{\cdot 3}$	0	0
$0^+_{\cdot}f^{\perp}\dagger$	0	0	0	0
$0^-_{\cdot}\mathcal{A}^{\parallel}\dagger$	0	0	0	0

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

	$2^+_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_{\cdot}f^{\parallel}{}_{\alpha\beta}$	$2^-_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{\cdot}\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{3 k^2 r_{\cdot 3}}{2}$	0	0
$2^+_{\cdot}f^{\parallel}\dagger^{\alpha\beta}$	0	0	0
$2^-_{\cdot}\mathcal{A}^{\parallel}\dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

	$0^+_{\cdot}\sigma^{\parallel}$	$0^+_{\cdot}\tau^{\parallel}$	$0^+_{\cdot}\tau^{\perp}$	$0^-_{\cdot}\sigma^{\parallel}$
$0^+_{\cdot}\sigma^{\parallel}\dagger$	$\frac{1}{(1+2k^2)^2 t_{\cdot 3}}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_{\cdot 3}}$	0	0
$0^+_{\cdot}\tau^{\parallel}\dagger$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_{\cdot 3}}$	$\frac{2k^2}{(1+2k^2)^2 t_{\cdot 3}}$	0	0
$0^+_{\cdot}\tau^{\perp}\dagger$	0	0	0	0
$0^-_{\cdot}\sigma^{\parallel}\dagger$	0	0	0	0

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

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

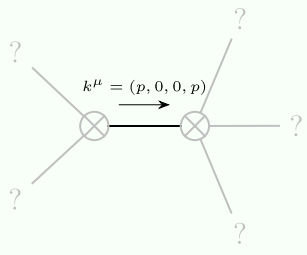
Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^-_{\cdot}\sigma^{\parallel} == 0$	$\epsilon \eta_{\alpha\beta\chi\delta} \partial^{\delta} \sigma^{\alpha\beta\chi} == 0$	1
$0^+_{\cdot}\tau^{\perp} == 0$	$\partial_{\beta} \partial_{\alpha} \tau (\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2 i k\, 0^+_{\cdot}\sigma^{\parallel} + 0^+_{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta} \partial_{\alpha} \tau (\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2 \partial_{\chi} \partial^{\chi} \partial_{\beta} \sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2 i k\, 1^-_{\cdot}\sigma^{\perp}{}^{\alpha} + 1^-_{\cdot}\tau^{\perp}{}^{\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta} \tau (\Delta+\mathcal{K})^{\alpha\beta} + 2 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial_{\beta} \sigma^{\beta\alpha\chi}$	3
$1^-_{\cdot}\tau^{\parallel}{}^{\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta} \tau (\Delta+\mathcal{K})^{\beta\alpha}$	3
$1^+_{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$\partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\beta\alpha}$	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^{\delta} \sigma^{\alpha\chi\beta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\chi\beta\alpha} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\beta\alpha\chi} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\chi\alpha\beta} + 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} == 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^{\delta} \sigma^{\alpha\chi\beta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\chi\beta\alpha} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\beta\alpha\chi} + 2 \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
$2^+_{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$4 \partial_{\delta} \partial_{\chi} \partial^{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi\delta} + 2 \partial_{\delta} \partial^{\delta} \partial^{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\alpha\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\beta\alpha} + 2\, \eta^{\alpha\beta}\, \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi} \tau (\Delta+\mathcal{K})^{\chi\delta} == 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\alpha\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\chi\alpha} + 2\, \eta^{\alpha\beta}\, \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:			25

Massive spectrum

(No particles)

Massless spectrum



Massless particle

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

Unitarity conditions

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