PSALTer results panel

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

Wave operator

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

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

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

Saturated propagator

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

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

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

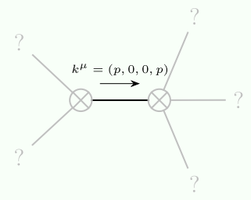
Source constraints

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

Massive spectrum

(No particles)

Massless spectrum



Massless particle

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

Unitarity conditions

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