PSALTer results panel

$$\mathcal{S} == \int\int\int\int (\mathcal{A}^{\alpha\beta\chi}{}_{\alpha\beta\chi} + f^{\alpha\beta}{}_{\alpha\beta} \tau (\Delta+\mathcal{K})_{\alpha\beta} + \frac{1}{3} t_{1} (3 \mathcal{A}^{\alpha\iota}{}_{\alpha} \mathcal{A}_{\iota}{}^{\theta}{}_{\theta} - 6 \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta} \partial_{\iota} f^{\alpha\iota} + 6 \mathcal{A}_{\iota}{}^{\theta}{}_{\theta} \partial^{\iota} f^{\alpha}{}_{\alpha} - 3 \partial_{\iota} f^{\theta}{}_{\theta} \partial^{\iota} f^{\alpha}{}_{\alpha} - 3 \partial_{\iota} f^{\alpha\iota} \partial_{\theta} f_{\alpha}{}^{\theta} + 6 \partial^{\iota} f^{\alpha}{}_{\alpha} \partial_{\theta} f_{\iota}{}^{\theta} + 2 \mathcal{A}_{\iota\theta\alpha} \partial^{\theta} f^{\alpha\iota} - 2 \partial_{\alpha} f_{\iota\theta} \partial^{\theta} f^{\alpha\iota} - 2 \partial_{\alpha} f_{\theta\iota} \partial^{\theta} f^{\alpha\iota} + \partial_{\iota} f_{\alpha\theta} \partial^{\theta} f^{\alpha\iota} + 2 \partial_{\theta} f_{\alpha\iota} \partial^{\theta} f^{\alpha\iota} + \partial_{\theta} f_{\iota\alpha} \partial^{\theta} f^{\alpha\iota} + \mathcal{A}_{\alpha\iota\theta} (\mathcal{A}^{\alpha\iota\theta} + 2 \partial^{\theta} f^{\alpha\iota}) + \mathcal{A}_{\alpha\theta\iota} (\mathcal{A}^{\alpha\iota\theta} + 4 \partial^{\theta} f^{\alpha\iota})) + r_{5} (\partial_{\iota} \mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa} \partial^{\theta} \mathcal{A}^{\alpha\iota}{}_{\alpha} - \partial_{\theta} \mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa} \partial^{\theta} \mathcal{A}^{\alpha\iota}{}_{\alpha} - (\partial_{\alpha} \mathcal{A}^{\alpha\iota\theta} - 2 \partial^{\theta} \mathcal{A}^{\alpha\iota}{}_{\alpha}) (\partial_{\kappa} \mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} - \partial_{\kappa} \mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}))) [t, x, y, z] dt dx dy dz$$

Wave operator

	$0^+_. \mathcal{A}^{\parallel}$	$0^+_. f^{\parallel}$	$0^+_. f^{\perp}$	$0^-_. \mathcal{A}^{\parallel}$
$0^+_. \mathcal{A}^{\parallel} \dagger$	$-t_{1}$	$i \sqrt{2} k t_{1}$	0	0
$0^+_. f^{\parallel} \dagger$	$-i \sqrt{2} k t_{1}$	$-2 k^2 t_{1}$	0	0
$0^+_. f^{\perp} \dagger$	0	0	0	0
$0^-_. \mathcal{A}^{\parallel} \dagger$	0	0	0	0

	$1^+_. \mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_. \mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_. f^{\parallel}{}_{\alpha\beta}$	$1^-_. \mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_. \mathcal{A}^{\perp}{}_{\alpha}$	$1^-_. f^{\parallel}{}_{\alpha}$	$1^-_. f^{\perp}{}_{\alpha}$
$1^+_. \mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$k^2 r_{5} + \frac{t_{1}}{6}$	$-\frac{t_{1}}{3 \sqrt{2}}$	$-\frac{i k t_{1}}{3 \sqrt{2}}$	0	0	0	0
$1^+_. \mathcal{A}^{\perp} \dagger^{\alpha\beta}$	$-\frac{t_{1}}{3 \sqrt{2}}$	$\frac{t_{1}}{3}$	$\frac{i k t_{1}}{3}$	0	0	0	0
$1^+_. f^{\parallel} \dagger^{\alpha\beta}$	$\frac{i k t_{1}}{3 \sqrt{2}}$	$-\frac{1}{3} i k t_{1}$	$\frac{k^2 t_{1}}{3}$	0	0	0	0
$1^-_. \mathcal{A}^{\parallel} \dagger^{\alpha}$	0	0	0	$k^2 r_{5} - \frac{t_{1}}{2}$	$\frac{t_{1}}{\sqrt{2}}$	0	$i k t_{1}$
$1^-_. \mathcal{A}^{\perp} \dagger^{\alpha}$	0	0	0	$\frac{t_{1}}{\sqrt{2}}$	0	0	0
$1^-_. f^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_. f^{\perp} \dagger^{\alpha}$	0	0	0	$-i k t_{1}$	0	0	0

	$2^+_. \mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_. f^{\parallel}{}_{\alpha\beta}$	$2^-_. \mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_. \mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$\frac{t_{1}}{2}$	$-\frac{i k t_{1}}{\sqrt{2}}$	0
$2^+_. f^{\parallel} \dagger^{\alpha\beta}$	$\frac{i k t_{1}}{\sqrt{2}}$	$k^2 t_{1}$	0
$2^-_. \mathcal{A}^{\parallel} \dagger^{\alpha\beta\chi}$	0	0	$\frac{t_{1}}{2}$

Saturated propagator

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

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

	$2^+_. \sigma^{\parallel}{}_{\alpha\beta}$	$2^+_. \tau^{\parallel}{}_{\alpha\beta}$	$2^-_. \sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_. \sigma^{\parallel} \dagger^{\alpha\beta}$	$\frac{2}{(1+2 k^2)^2 t_{1}}$	$-\frac{2 i \sqrt{2} k}{(1+2 k^2)^2 t_{1}}$	0
$2^+_. \tau^{\parallel} \dagger^{\alpha\beta}$	$\frac{2 i \sqrt{2} k}{(1+2 k^2)^2 t_{1}}$	$\frac{4 k^2}{(1+2 k^2)^2 t_{1}}$	0
$2^-_. \sigma^{\parallel} \dagger^{\alpha\beta\chi}$	0	0	$\frac{2}{t_{1}}$

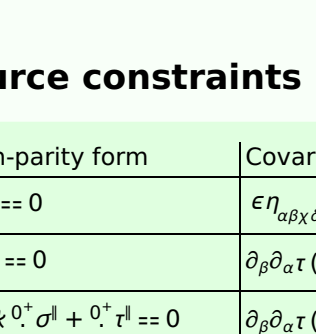
Source constraints

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
$i k \, 1^+_. \sigma^{\perp}{}^{\alpha\beta} + 1^+_. \tau^{\parallel}{}^{\alpha\beta} == 0$	$\partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\alpha\beta} + 2 \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi\beta\delta} + 2 \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\chi\alpha\beta} == \partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\beta\alpha} + 2 \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi\alpha\delta}$	3
$-2 i k \, 2^+_. \sigma^{\parallel}{}^{\alpha\beta} + 2^+_. \tau^{\parallel}{}^{\alpha\beta} == 0$	$-i (4 \partial_{\delta} \partial_{\chi} \partial^{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi\delta} + 2 \partial_{\delta} \partial^{\delta} \partial^{\beta} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi} - 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta+\mathcal{K})^{\beta\chi} - 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\alpha\beta} - 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\alpha\chi} - 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta+\mathcal{K})^{\chi\alpha} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\alpha\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta+\mathcal{K})^{\beta\alpha} + 4 i k^{\chi} \partial_{\epsilon} \partial_{\chi} \partial^{\beta} \partial^{\alpha} \sigma^{\delta}{}_{\delta}{}^{\epsilon} - 6 i k^{\chi} \partial_{\epsilon} \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\delta\beta\epsilon} - 6 i k^{\chi} \partial_{\epsilon} \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\delta\alpha\epsilon} + 6 i k^{\chi} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi} \sigma^{\alpha\beta\delta} + 6 i k^{\chi} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi} \sigma^{\beta\alpha\delta} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi} \tau (\Delta+\mathcal{K})^{\chi\delta} - 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi} - 4 i \eta^{\alpha\beta} k^{\chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial_{\chi} \sigma^{\delta}{}_{\delta}{}^{\epsilon}) == 0$	5
Total expected gauge generators:		17

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$\frac{9}{r_{5}} + \frac{2 p^2}{t_{1}} + \frac{2 r_{5} p^4}{t_{1}^2} > 0$
Polarisations:	2

Unitarity conditions

$r_{5} > 0 \;\&\&\; (t_{1} < 0 \,||\, t_{1} > 0)$