PSALTer results panel

$$S == \int\int\int\int (\frac{1}{6} (6\ \mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + 6\ f^{\alpha\beta}\ \tau (\Delta+\mathcal{K})_{\alpha\beta} + 8 r_{.2} \partial_\beta \mathcal{A}_{\alpha\iota\theta} \partial^\theta \mathcal{A}^{\alpha\beta\iota} - 4 r_{.2} \partial_\beta \mathcal{A}_{\alpha\theta\iota} \partial^\theta \mathcal{A}^{\alpha\beta\iota} + 4 r_{.2} \partial_\beta \mathcal{A}_{\iota\theta\alpha} \partial^\theta \mathcal{A}^{\alpha\beta\iota} - 2 r_{.2} \partial_\iota \mathcal{A}_{\alpha\beta\theta} \partial^\theta \mathcal{A}^{\alpha\beta\iota} + 2 r_{.2} \partial_\theta \mathcal{A}_{\alpha\beta\iota} \partial^\theta \mathcal{A}^{\alpha\beta\iota} - 4 r_{.2} \partial_\theta \mathcal{A}_{\alpha\iota\beta} \partial^\theta \mathcal{A}^{\alpha\beta\iota} + 6 r_{.5} \partial_\iota \mathcal{A}_\theta{}^\kappa{}_\kappa \partial^\theta \mathcal{A}^{\alpha\iota}{}_\alpha - 6 r_{.5} \partial_\theta \mathcal{A}_\iota{}^\kappa{}_\kappa \partial^\theta \mathcal{A}^{\alpha\iota}{}_\alpha + 4 t_{.2}\ \mathcal{A}_{\iota\theta\alpha} \partial^\theta f^{\alpha\iota} + 2 t_{.2} \partial_\alpha f_{\iota\theta} \partial^\theta f^{\alpha\iota} - t_{.2} \partial_\alpha f_{\theta\iota} \partial^\theta f^{\alpha\iota} - t_{.2} \partial_\iota f_{\alpha\theta} \partial^\theta f^{\alpha\iota} + t_{.2} \partial_\theta f_{\alpha\iota} \partial^\theta f^{\alpha\iota} - t_{.2} \partial_\theta f_{\iota\alpha} \partial^\theta f^{\alpha\iota} - 4 t_{.2}\ \mathcal{A}_{\alpha\theta\iota} (\mathcal{A}^{\alpha\iota\theta} + \partial^\theta f^{\alpha\iota}) + 2 t_{.2}\ \mathcal{A}_{\alpha\iota\theta} (\mathcal{A}^{\alpha\iota\theta} + 2 \partial^\theta f^{\alpha\iota}) - 6 r_{.5} \partial_\alpha \mathcal{A}^{\alpha\iota\theta} \partial_\kappa \mathcal{A}_\iota{}^\kappa{}_\theta + 12 r_{.5} \partial^\theta \mathcal{A}^{\alpha\iota}{}_\alpha \partial_\kappa \mathcal{A}_\iota{}^\kappa{}_\theta + 6 r_{.5} \partial_\alpha \mathcal{A}^{\alpha\iota\theta} \partial_\kappa \mathcal{A}_\theta{}^\kappa{}_\iota - 12 r_{.5} \partial^\theta \mathcal{A}^{\alpha\iota}{}_\alpha \partial_\kappa \mathcal{A}_\theta{}^\kappa{}_\iota))[t, x, y, z]\, dz\, dy\, dx\, dt$$

Wave operator

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

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

	$2^+_.\mathcal{A}^\parallel{}_{\alpha\beta}$	$2^+_.f^\parallel{}_{\alpha\beta}$	$2^-_.\mathcal{A}^\parallel{}_{\alpha\beta\chi}$
$2^+_.\mathcal{A}^\parallel\,\dagger^{\alpha\beta}$	0	0	0
$2^+_.f^\parallel\,\dagger^{\alpha\beta}$	0	0	0
$2^-_.\mathcal{A}^\parallel\,\dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

	$0^+_.\sigma^\parallel$	$0^+_.\tau^\parallel$	$0^+_.\tau^\perp$	$0^-_.\sigma^\parallel$
$0^+_.\sigma^\parallel\,\dagger$	0	0	0	0
$0^+_.\tau^\parallel\,\dagger$	0	0	0	0
$0^+_.\tau^\perp\,\dagger$	0	0	0	0
$0^-_.\sigma^\parallel\,\dagger$	0	0	0	$\frac{1}{k^2 r_{.2} + t_{.2}}$

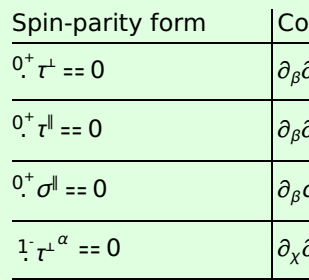
	$1^+_.\sigma^\parallel{}_{\alpha\beta}$	$1^+_.\sigma^\perp{}_{\alpha\beta}$	$1^+_.\tau^\parallel{}_{\alpha\beta}$	$1^-_.\sigma^\parallel{}_\alpha$	$1^-_.\sigma^\perp{}_\alpha$	$1^-_.\tau^\parallel{}_\alpha$	$1^-_.\tau^\perp{}_\alpha$
$1^+_.\sigma^\parallel\,\dagger^{\alpha\beta}$	$\frac{1}{k^2 r_{.5}}$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

	$2^+_.\sigma^\parallel{}_{\alpha\beta}$	$2^+_.\tau^\parallel{}_{\alpha\beta}$	$2^-_.\sigma^\parallel{}_{\alpha\beta\chi}$
$2^+_.\sigma^\parallel\,\dagger^{\alpha\beta}$	0	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
$0^+_.\tau^\perp == 0$	$\partial_\beta \partial_\alpha \tau (\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$0^+_.\tau^\parallel == 0$	$\partial_\beta \partial_\alpha \tau (\Delta+\mathcal{K})^{\alpha\beta} == \partial_\beta \partial^\beta \tau (\Delta+\mathcal{K})^\alpha{}_\alpha$	1
$0^+_.\sigma^\parallel == 0$	$\partial_\beta \sigma^\alpha{}_\alpha{}^\beta == 0$	1
$1^-_.\tau^\perp{}^\alpha == 0$	$\partial_\chi \partial_\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \tau (\Delta+\mathcal{K})^{\alpha\beta}$	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
$1^-_.\sigma^\perp{}^\alpha == 0$	$\partial_\chi \partial_\beta \sigma^{\beta\alpha\chi} == 0$	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
$2^-_.\sigma^\parallel{}^{\alpha\beta\chi} == 0$	$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
$2^+_.\tau^\parallel{}^{\alpha\beta} == 0$	$4 \partial_\delta \partial_\chi \partial^\beta \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\delta} + 2 \partial_\delta \partial^\delta \partial^\beta \partial^\alpha \tau (\Delta+\mathcal{K})^\chi{}_\chi + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\alpha\beta} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau (\Delta+\mathcal{K})^{\beta\alpha} + 2\ \eta^{\alpha\beta}\ \partial_\epsilon \partial^\epsilon \partial_\delta \partial_\chi \tau (\Delta+\mathcal{K})^{\chi\delta} == 3 \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\beta} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\alpha\chi} + 3 \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau (\Delta+\mathcal{K})^{\chi\alpha} + 2\ \eta^{\alpha\beta}\ \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \tau (\Delta+\mathcal{K})^\chi{}_\chi$	5
$2^+_.\sigma^\parallel{}^{\alpha\beta} == 0$	$3 \partial_\delta \partial_\chi \partial^\alpha \sigma^{\chi\beta\delta} + 3 \partial_\delta \partial_\chi \partial^\beta \sigma^{\chi\alpha\delta} + 2\ \eta^{\alpha\beta}\ \partial_\epsilon \partial^\epsilon \partial_\delta \sigma^\chi{}_\chi{}^\delta == 2 \partial_\delta \partial^\beta \partial^\alpha \sigma^\chi{}_\chi{}^\delta + 3 (\partial_\delta \partial^\delta \partial_\chi \sigma^{\alpha\beta\chi} + \partial_\delta \partial^\delta \partial_\chi \sigma^{\beta\alpha\chi})$	5
Total expected gauge generators:		30

Massive spectrum



Massive particle

Pole residue:	$-\frac{1}{r_{.2}} > 0$
Square mass:	$-\frac{t_{.2}}{r_{.2}} > 0$
Spin:	0
Parity:	Odd

Massless spectrum

(No particles)

Unitarity conditions

$r_{.2} < 0\ \&\&\ t_{.2} > 0$