PSALTer results panel

$$\mathcal{S} == \iiint\!\!\int (\tfrac{1}{6}(6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 6\,f^{\alpha\beta}\,\tau(\Delta+\mathcal{K})_{\alpha\beta} + 8 r_{\cdot 2}\,\partial_\beta\mathcal{A}_{\alpha\iota\theta}\partial^\theta\mathcal{A}^{\alpha\beta\iota} - 4 r_{\cdot 2}\,\partial_\beta\mathcal{A}_{\alpha\theta\iota}\partial^\theta\mathcal{A}^{\alpha\beta\iota} + 4 r_{\cdot 2}\,\partial_\beta\mathcal{A}_{\iota\theta\alpha}\partial^\theta\mathcal{A}^{\alpha\beta\iota} - 2 r_{\cdot 2}\,\partial_\iota\mathcal{A}_{\alpha\beta\theta}\partial^\theta\mathcal{A}^{\alpha\beta\iota} + 2 r_{\cdot 2}\,\partial_\theta\mathcal{A}_{\alpha\beta\iota}\partial^\theta\mathcal{A}^{\alpha\beta\iota} - 4 r_{\cdot 2}\,\partial_\theta\mathcal{A}_{\alpha\iota\beta}\partial^\theta\mathcal{A}^{\alpha\beta\iota} + 6 r_{\cdot 5}\,\partial_\iota\mathcal{A}_\theta{}^\kappa{}_\kappa\partial^\theta\mathcal{A}^{\alpha\iota}{}_\alpha - 6 r_{\cdot 5}\,\partial_\theta\mathcal{A}_\iota{}^\kappa{}_\kappa\partial^\theta\mathcal{A}^{\alpha\iota}{}_\alpha + 4 t_{\cdot 2}\,\mathcal{A}_{\iota\theta\alpha}\,\partial^\theta f^{\alpha\iota} + 2 t_{\cdot 2}\,\partial_\alpha f_{\iota\theta}\partial^\theta f^{\alpha\iota} - t_{\cdot 2}\,\partial_\alpha f_{\theta\iota}\partial^\theta f^{\alpha\iota} - t_{\cdot 2}\,\partial_\iota f_{\alpha\theta}\partial^\theta f^{\alpha\iota} + t_{\cdot 2}\,\partial_\theta f_{\alpha\iota}\partial^\theta f^{\alpha\iota} - t_{\cdot 2}\,\partial_\theta f_{\iota\alpha}\partial^\theta f^{\alpha\iota} - 4 t_{\cdot 2}\,\mathcal{A}_{\alpha\theta\iota}\,(\mathcal{A}^{\alpha\iota\theta} + \partial^\theta f^{\alpha\iota}) + 2 t_{\cdot 2}\,\mathcal{A}_{\alpha\iota\theta}\,(\mathcal{A}^{\alpha\iota\theta} + 2\,\partial^\theta f^{\alpha\iota}) - 6 r_{\cdot 5}\,\partial_\alpha\mathcal{A}^{\alpha\iota\theta}\partial_\kappa\mathcal{A}_\iota{}^\kappa{}_\theta + 12 r_{\cdot 5}\,\partial^\theta\mathcal{A}^{\alpha\iota}{}_\alpha\partial_\kappa\mathcal{A}_\iota{}^\kappa{}_\theta + 6 r_{\cdot 5}\,\partial_\alpha\mathcal{A}^{\alpha\iota\theta}\partial_\kappa\mathcal{A}_\theta{}^\kappa{}_\iota - 12 r_{\cdot 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

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

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

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

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

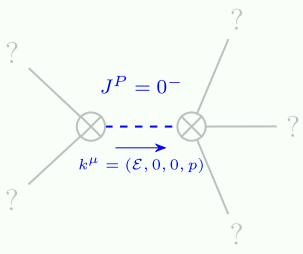
	$1^+_\cdot\sigma^\parallel{}_{\alpha\beta}$	$1^+_\cdot\sigma^\perp{}_{\alpha\beta}$	$1^+_\cdot\tau^\parallel{}_{\alpha\beta}$	$1^-_\cdot\sigma^\parallel{}_\alpha$	$1^-_\cdot\sigma^\perp{}_\alpha$	$1^-_\cdot\tau^\parallel{}_\alpha$	$1^-_\cdot\tau^\perp{}_\alpha$
$1^+_\cdot\sigma^\parallel\,\dagger^{\alpha\beta}$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

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

Massive spectrum



Massive particle

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

Massless spectrum

(No particles)

Unitarity conditions

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