PSALTer results panel

$$\mathcal{S} == \int\int\int\int (\frac{1}{6} (-4 t_3 \mathcal{A}^{\alpha\imath}{}_{\alpha} \mathcal{A}_{\imath}{}^{\theta}{}_{\theta} + 6 \mathcal{A}^{\alpha\beta\chi} \sigma_{\alpha\beta\chi} + 6 f^{\alpha\beta} \tau (\Delta+\mathcal{K})_{\alpha\beta} + 8 t_3 \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta} \partial_{\imath} f^{\alpha\imath} - 15 r_3 \partial_{\beta} \mathcal{A}_{\imath}{}^{\theta}{}_{\theta} \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} + 9 r_3 \partial_{\imath} \mathcal{A}_{\beta}{}^{\theta}{}_{\theta} \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} - 8 t_3 \mathcal{A}_{\imath}{}^{\theta}{}_{\theta} \partial^{\prime} f^{\alpha}{}_{\alpha} + 4 t_3 \partial_{\imath} f^{\theta}{}_{\theta} \partial^{\prime} f^{\alpha}{}_{\alpha} + 9 r_3 \partial_{\alpha} \mathcal{A}^{\alpha\beta\imath} \partial_{\theta} \mathcal{A}_{\beta}{}^{\theta}{}_{\imath} - 18 r_3 \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} \partial_{\theta} \mathcal{A}_{\beta}{}^{\theta}{}_{\imath} - 15 r_3 \partial_{\alpha} \mathcal{A}^{\alpha\beta\imath} \partial_{\theta} \mathcal{A}_{\imath}{}^{\theta}{}_{\beta} + 30 r_3 \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} \partial_{\theta} \mathcal{A}_{\imath}{}^{\theta}{}_{\beta} + 4 t_3 \partial_{\imath} f^{\alpha\imath} \partial_{\theta} f_{\alpha}{}^{\theta} - 8 t_3 \partial^{\prime} f^{\alpha}{}_{\alpha} \partial_{\theta} f_{\imath}{}^{\theta} + 8 r_2 \partial_{\beta} \mathcal{A}_{\alpha\imath\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} - 4 r_2 \partial_{\beta} \mathcal{A}_{\alpha\theta\imath} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} + 4 r_2 \partial_{\beta} \mathcal{A}_{\imath\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} - 24 r_3 \partial_{\beta} \mathcal{A}_{\imath\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} - 2 r_2 \partial_{\imath} \mathcal{A}_{\alpha\beta\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} + 2 r_2 \partial_{\theta} \mathcal{A}_{\alpha\beta\imath} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} - 4 r_2 \partial_{\theta} \mathcal{A}_{\alpha\imath\beta} \partial^{\theta} \mathcal{A}^{\alpha\beta\imath} + 4 t_2 \mathcal{A}_{\imath\theta\alpha} \partial^{\theta} f^{\alpha\imath} + 2 t_2 \partial_{\alpha} f_{\imath\theta} \partial^{\theta} f^{\alpha\imath} - t_2 \partial_{\alpha} f_{\theta\imath} \partial^{\theta} f^{\alpha\imath} - t_2 \partial_{\imath} f_{\alpha\theta} \partial^{\theta} f^{\alpha\imath} + t_2 \partial_{\theta} f_{\alpha\imath} \partial^{\theta} f^{\alpha\imath} - t_2 \partial_{\theta} f_{\imath\alpha} \partial^{\theta} f^{\alpha\imath} - 4 t_2 \mathcal{A}_{\alpha\theta\imath} (\mathcal{A}^{\alpha\imath\theta} + \partial^{\theta} f^{\alpha\imath}) + 2 t_2 \mathcal{A}_{\alpha\imath\theta} (\mathcal{A}^{\alpha\imath\theta} + 2 \partial^{\theta} f^{\alpha\imath}))) [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_3	$-i\sqrt{2}\,k t_3$	0	0
$0^+_{\cdot}f^{\parallel}\dagger$	$i\sqrt{2}\,k t_3$	$2k^2 t_3$	0	0
$0^+_{\cdot}f^{\perp}\dagger$	0	0	0	0
$0^-_{\cdot}\mathcal{A}^{\parallel}\dagger$	0	0	0	$k^2 r_2 + t_2$

	$1^+_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_{\cdot}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_{\cdot}f^{\parallel}{}_{\alpha\beta}$	$1^-_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_{\cdot}f^{\parallel}{}_{\alpha}$	$1^-_{\cdot}f^{\perp}{}_{\alpha}$
$1^+_{\cdot}\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$	$\frac{2t_2}{3}$	$\frac{\sqrt{2}\,t_2}{3}$	$\frac{1}{3} i\sqrt{2}\,k t_2$	0	0	0	0
$1^+_{\cdot}\mathcal{A}^{\perp}\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\,t_2}{3}$	$\frac{t_2}{3}$	$\frac{i k t_2}{3}$	0	0	0	0
$1^+_{\cdot}f^{\parallel}\dagger^{\alpha\beta}$	$-\frac{1}{3} i\sqrt{2}\,k t_2$	$-\frac{1}{3} i k t_2$	$\frac{k^2 t_2}{3}$	0	0	0	0
$1^-_{\cdot}\mathcal{A}^{\parallel}\dagger^{\alpha}$	0	0	0	$\frac{1}{6}(-9k^2 r_3 + 4t_3)$	$-\frac{\sqrt{2}\,t_3}{3}$	0	$-\frac{2}{3} i k t_3$
$1^-_{\cdot}\mathcal{A}^{\perp}\dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2}\,t_3}{3}$	$\frac{t_3}{3}$	0	$\frac{1}{3} i\sqrt{2}\,k t_3$
$1^-_{\cdot}f^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_{\cdot}f^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{2 i k t_3}{3}$	$-\frac{1}{3} i\sqrt{2}\,k t_3$	0	$\frac{2k^2 t_3}{3}$

	$2^+_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_{\cdot}f^{\parallel}{}_{\alpha\beta}$	$2^-_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{\cdot}\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{3k^2 r_3}{2}$	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

	$0^+_{\cdot}\sigma^{\parallel}$	$0^+_{\cdot}\tau^{\parallel}$	$0^+_{\cdot}\tau^{\perp}$	$0^-_{\cdot}\sigma^{\parallel}$
$0^+_{\cdot}\sigma^{\parallel}\dagger$	$\frac{1}{(1+2k^2)^2 t_3}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	0	0
$0^+_{\cdot}\tau^{\parallel}\dagger$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	$\frac{2k^2}{(1+2k^2)^2 t_3}$	0	0
$0^+_{\cdot}\tau^{\perp}\dagger$	0	0	0	0
$0^-_{\cdot}\sigma^{\parallel}\dagger$	0	0	0	$\frac{1}{k^2 r_2 + t_2}$

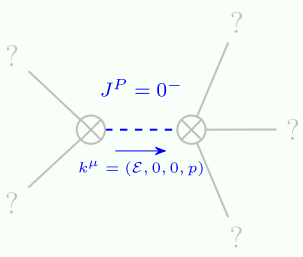
	$1^+_{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_{\cdot}\sigma^{\perp}{}_{\alpha\beta}$	$1^+_{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$1^-_{\cdot}\sigma^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\sigma^{\perp}{}_{\alpha}$	$1^-_{\cdot}\tau^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\tau^{\perp}{}_{\alpha}$
$1^+_{\cdot}\sigma^{\parallel}\dagger^{\alpha\beta}$	$\frac{6}{(3+k^2)^2 t_2}$	$\frac{3\sqrt{2}}{(3+k^2)^2 t_2}$	$\frac{3i\sqrt{2}\,k}{(3+k^2)^2 t_2}$	0	0	0	0
$1^+_{\cdot}\sigma^{\perp}\dagger^{\alpha\beta}$	$\frac{3\sqrt{2}}{(3+k^2)^2 t_2}$	$\frac{3}{(3+k^2)^2 t_2}$	$\frac{3ik}{(3+k^2)^2 t_2}$	0	0	0	0
$1^+_{\cdot}\tau^{\parallel}\dagger^{\alpha\beta}$	$-\frac{3i\sqrt{2}\,k}{(3+k^2)^2 t_2}$	$-\frac{3ik}{(3+k^2)^2 t_2}$	$\frac{3k^2}{(3+k^2)^2 t_2}$	0	0	0	0
$1^-_{\cdot}\sigma^{\parallel}\dagger^{\alpha}$	0	0	0	$-\frac{2}{3k^2 r_3}$	$-\frac{2\sqrt{2}}{3k^2 r_3 + 6k^4 r_3}$	0	$-\frac{4i}{3k r_3 + 6k^3 r_3}$
$1^-_{\cdot}\sigma^{\perp}\dagger^{\alpha}$	0	0	0	$-\frac{2\sqrt{2}}{3k^2 r_3 + 6k^4 r_3}$	$\frac{9k^2 r_3 - 4t_3}{3(k+2k^3)^2 r_3 t_3}$	0	$\frac{i\sqrt{2}\,(9k^2 r_3 - 4t_3)}{3k(1+2k^2)^2 r_3 t_3}$
$1^-_{\cdot}\tau^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_{\cdot}\tau^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{4i}{3k r_3 + 6k^3 r_3}$	$-\frac{i\sqrt{2}\,(9k^2 r_3 - 4t_3)}{3k(1+2k^2)^2 r_3 t_3}$	0	$\frac{2(9k^2 r_3 - 4t_3)}{3(1+2k^2)^2 r_3 t_3}$

	$2^+_{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$2^-_{\cdot}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{\cdot}\sigma^{\parallel}\dagger^{\alpha\beta}$	$-\frac{2}{3k^2 r_3}$	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
$0^+_{\cdot}\tau^{\perp} == 0$	$\partial_\beta\partial_\alpha \tau (\Delta+\mathcal{K})^{\alpha\beta} == 0$	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
$i k\, 1^+_{\cdot}\sigma^{\parallel\alpha\beta} + 1^+_{\cdot}\tau^{\parallel\alpha\beta} == 0$	$\partial_\chi\partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} + \partial_\chi\partial^\beta \tau (\Delta+\mathcal{K})^{\chi\alpha} + \partial_\chi\partial^\chi \tau (\Delta+\mathcal{K})^{\alpha\beta} + \partial_\delta\partial_\chi\partial^\beta\sigma^{\chi\alpha\delta} + \partial_\delta\partial^\delta\partial_\chi\sigma^{\alpha\beta\chi} == \partial_\chi\partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\beta} + \partial_\chi\partial^\beta \tau (\Delta+\mathcal{K})^{\alpha\chi} + \partial_\chi\partial^\chi \tau (\Delta+\mathcal{K})^{\beta\alpha} + \partial_\delta\partial_\chi\partial^\alpha\sigma^{\chi\beta\delta} + \partial_\delta\partial^\delta\partial_\chi\sigma^{\beta\alpha\chi}$	3
$1^+_{\cdot}\sigma^{\parallel\alpha\beta} == 1^+_{\cdot}\sigma^{\perp\alpha\beta}$	$3\,\partial_\delta\partial_\chi\partial^\alpha\sigma^{\chi\beta\delta} + \partial_\delta\partial^\delta\partial_\chi\sigma^{\beta\alpha\chi} + 2\,\partial_\delta\partial^\delta\partial_\chi\sigma^{\chi\alpha\beta} == 3\,\partial_\delta\partial_\chi\partial^\beta\sigma^{\chi\alpha\delta} + \partial_\delta\partial^\delta\partial_\chi\sigma^{\alpha\beta\chi}$	3
$2^-_{\cdot}\sigma^{\parallel\alpha\beta\chi} == 0$	$3\,\partial_\epsilon\partial_\delta\partial^\chi\partial^\alpha\sigma^{\delta\beta\epsilon} + 3\,\partial_\epsilon\partial^\epsilon\partial^\chi\partial^\alpha\sigma^{\delta\beta}{}_{\delta} + 2\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\beta\sigma^{\alpha\chi\delta} + 4\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\beta\sigma^{\chi\alpha\delta} + 2\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\sigma^{\alpha\beta\chi} + 3\,\eta^{\beta\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial^\alpha\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\,\eta^{\alpha\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial_\delta\sigma^{\delta\beta\epsilon} + 3\,\eta^{\beta\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial^\epsilon\sigma^{\delta\alpha}{}_{\delta} == 3\,\partial_\epsilon\partial_\delta\partial^\chi\partial^\beta\sigma^{\delta\alpha\epsilon} + 3\,\partial_\epsilon\partial^\epsilon\partial^\chi\partial^\beta\sigma^{\delta\alpha}{}_{\delta} + 2\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\alpha\sigma^{\beta\chi\delta} + 4\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\alpha\sigma^{\chi\beta\delta} + 2\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\sigma^{\beta\alpha\chi} + 4\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\sigma^{\chi\alpha\beta} + 3\,\eta^{\alpha\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial^\beta\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\,\eta^{\beta\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial_\delta\sigma^{\delta\alpha\epsilon} + 3\,\eta^{\alpha\chi}\,\partial_\phi\partial^\phi\partial_\epsilon\partial^\epsilon\sigma^{\delta\beta}{}_{\delta}$	5
$2^+_{\cdot}\tau^{\parallel\alpha\beta} == 0$	$4\,\partial_\delta\partial_\chi\partial^\beta\partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_\delta\partial^\delta\partial^\beta\partial^\alpha \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi \tau (\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi \tau (\Delta+\mathcal{K})^{\beta\alpha} + 2\,\eta^{\alpha\beta}\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi \tau (\Delta+\mathcal{K})^{\chi\delta} == 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\alpha \tau (\Delta+\mathcal{K})^{\beta\chi} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\alpha \tau (\Delta+\mathcal{K})^{\chi\beta} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\beta \tau (\Delta+\mathcal{K})^{\alpha\chi} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\beta \tau (\Delta+\mathcal{K})^{\chi\alpha} + 2\,\eta^{\alpha\beta}\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta \tau (\Delta+\mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:			24

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

$r_2 < 0 \;\&\&\; t_2 > 0$