PSALTer results panel

$$\mathcal{S} == \int\int\int\int \left(\frac{1}{6}\left(2\,t_1\,\mathcal{A}^{\alpha\,\prime}{}_{\alpha}\,\mathcal{A}_{\prime}{}^{\theta}{}_{\theta} + 6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 6\,f^{\alpha\beta}\,\tau\,(\Delta+\mathcal{K})_{\alpha\beta} - 4\,t_1\,\mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\,\partial_{\prime} f^{\alpha\,\prime} - 24\,r_3\,\partial_\beta \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} + 4\,t_1\,\mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\,\partial^{\prime} f^{\alpha}{}_{\alpha} - \right.\right.$$
$$2\,t_1\,\partial_{\prime} f^{\theta}{}_{\theta}\,\partial^{\prime} f^{\alpha}{}_{\alpha} - 24\,r_3\,\partial_\alpha \mathcal{A}^{\alpha\beta\,\prime}\,\partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} + 48\,r_3\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\,\partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 2\,t_1\,\partial_{\prime} f^{\alpha\,\prime}\,\partial_\theta f^{\alpha}{}_{\alpha} + 4\,t_1\,\partial^{\prime} f^{\alpha}{}_{\alpha}\,\partial_\theta f_{\prime}{}^{\theta} + 8\,r_2\,\partial_\beta \mathcal{A}_{\alpha\,\prime\,\theta}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} -$$
$$4\,r_2\,\partial_\beta \mathcal{A}_{\alpha\theta\,\prime}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} + 4\,r_2\,\partial_\beta \mathcal{A}_{\prime\,\theta\alpha}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} - 24\,r_3\,\partial_\beta \mathcal{A}_{\prime\,\theta\alpha}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} - 2\,r_2\,\partial_{\prime} \mathcal{A}_{\alpha\beta\theta}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} + 2\,r_2\,\partial_\theta \mathcal{A}_{\alpha\beta\,\prime}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} -$$
$$4\,r_2\,\partial_\theta \mathcal{A}_{\alpha\,\prime\,\beta}\,\partial^\theta \mathcal{A}^{\alpha\beta\,\prime} + 4\,t_1\,\mathcal{A}_{\prime\,\theta\alpha}\,\partial^\theta f^{\alpha\,\prime} + 4\,t_2\,\mathcal{A}_{\prime\,\theta\alpha}\,\partial^\theta f^{\alpha\,\prime} - 4\,t_1\,\partial_\alpha f_{\prime\,\theta}\,\partial^\theta f^{\alpha\,\prime} + 2\,t_2\,\partial_\alpha f_{\prime\,\theta}\,\partial^\theta f^{\alpha\,\prime} - 4\,t_1\,\partial_\alpha f_{\theta\,\prime}\,\partial^\theta f^{\alpha\,\prime} -$$
$$t_2\,\partial_\alpha f_{\theta\,\prime}\,\partial^\theta f^{\alpha\,\prime} + 2\,t_1\,\partial_{\prime} f_{\alpha\theta}\,\partial^\theta f^{\alpha\,\prime} - t_2\,\partial_{\prime} f_{\alpha\theta}\,\partial^\theta f^{\alpha\,\prime} + 4\,t_1\,\partial_\theta f_{\alpha\,\prime}\,\partial^\theta f^{\alpha\,\prime} + t_2\,\partial_\theta f_{\alpha\,\prime}\,\partial^\theta f^{\alpha\,\prime} + 2\,t_1\,\partial_\theta f_{\prime\,\alpha}\,\partial^\theta f^{\alpha\,\prime} - t_2\,\partial_\theta f_{\prime\,\alpha}\,\partial^\theta f^{\alpha\,\prime} +$$
$$\left.\left.2\left(t_1 + t_2\right)\mathcal{A}_{\alpha\,\prime\,\theta}\left(\mathcal{A}^{\alpha\,\prime\,\theta} + 2\,\partial^\theta f^{\alpha\,\prime}\right) + 2\,\mathcal{A}_{\alpha\theta\,\prime}\left(\left(t_1 - 2\,t_2\right)\mathcal{A}^{\alpha\,\prime\,\theta} + 2\left(2\,t_1 - t_2\right)\partial^\theta f^{\alpha\,\prime}\right)\right)\right)[t,\,x,\,y,\,z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^+_\cdot\mathcal{A}^{\parallel}$	$0^+_\cdot f^{\parallel}$	$0^+_\cdot f^{\perp}$	$0^-_\cdot\mathcal{A}^{\parallel}$
$0^+_\cdot\mathcal{A}^{\parallel}\,\dagger$	$6\,k^2\,r_3$	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	$k^2\,r_2 + t_2$

	$1^+_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_\cdot\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_\cdot f^{\parallel}{}_{\alpha\beta}$	$1^-_\cdot\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_\cdot\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_\cdot f^{\parallel}{}_{\alpha}$	$1^-_\cdot f^{\perp}{}_{\alpha}$
$1^+_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{6}\left(t_1 + 4\,t_2\right)$	$-\frac{t_1 - 2\,t_2}{3\,\sqrt{2}}$	$-\frac{i\,k\left(t_1 - 2\,t_2\right)}{3\,\sqrt{2}}$	0	0	0	0
$1^+_\cdot\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{t_1 - 2\,t_2}{3\,\sqrt{2}}$	$\frac{t_1 + t_2}{3}$	$\frac{1}{3}\,i\,k\left(t_1 + t_2\right)$	0	0	0	0
$1^+_\cdot f^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\,k\left(t_1 - 2\,t_2\right)}{3\,\sqrt{2}}$	$-\frac{1}{3}\,i\,k\left(t_1 + t_2\right)$	$\frac{1}{3}\,k^2\left(t_1 + t_2\right)$	0	0	0	0
$1^-_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{t_1}{6}$	$\frac{t_1}{3\,\sqrt{2}}$	0	$\frac{i\,k\,t_1}{3}$
$1^-_\cdot\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{t_1}{3\,\sqrt{2}}$	$\frac{t_1}{3}$	0	$\frac{1}{3}\,i\,\sqrt{2}\,k\,t_1$
$1^-_\cdot f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot f^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{1}{3}\,i\,k\,t_1$	$-\frac{1}{3}\,i\,\sqrt{2}\,k\,t_1$	0	$\frac{2\,k^2\,t_1}{3}$

	$2^+_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_\cdot f^{\parallel}{}_{\alpha\beta}$	$2^-_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{t_1}{2}$	$-\frac{i\,k\,t_1}{\sqrt{2}}$	0
$2^+_\cdot f^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\,k\,t_1}{\sqrt{2}}$	$k^2\,t_1$	0
$2^-_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{t_1}{2}$

Saturated propagator

	$0^+_\cdot\sigma^{\parallel}$	$0^+_\cdot\tau^{\parallel}$	$0^+_\cdot\tau^{\perp}$	$0^-_\cdot\sigma^{\parallel}$
$0^+_\cdot\sigma^{\parallel}\,\dagger$	$\frac{1}{6\,k^2\,r_3}$	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	$\frac{1}{k^2\,r_2 + t_2}$

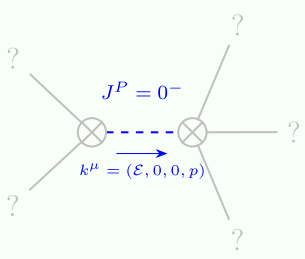
	$1^+_\cdot\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_\cdot\sigma^{\perp}{}_{\alpha\beta}$	$1^+_\cdot\tau^{\parallel}{}_{\alpha\beta}$	$1^-_\cdot\sigma^{\parallel}{}_{\alpha}$	$1^-_\cdot\sigma^{\perp}{}_{\alpha}$	$1^-_\cdot\tau^{\parallel}{}_{\alpha}$	$1^-_\cdot\tau^{\perp}{}_{\alpha}$
$1^+_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2\left(t_1 + t_2\right)}{3\,t_1\,t_2}$	$\frac{\sqrt{2}\left(t_1 - 2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	$\frac{i\,\sqrt{2}\,k\left(t_1 - 2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	0	0	0	0
$1^+_\cdot\sigma^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\left(t_1 - 2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	$\frac{t_1 + 4\,t_2}{3\left(1+k^2\right)^2 t_1\,t_2}$	$\frac{i\,k\left(t_1 + 4\,t_2\right)}{3\left(1+k^2\right)^2 t_1\,t_2}$	0	0	0	0
$1^+_\cdot\tau^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{i\,\sqrt{2}\,k\left(t_1 - 2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	$-\frac{i\,k\left(t_1 + 4\,t_2\right)}{3\left(1+k^2\right)^2 t_1\,t_2}$	$\frac{k^2\left(t_1 + 4\,t_2\right)}{3\left(1+k^2\right)^2 t_1\,t_2}$	0	0	0	0
$1^-_\cdot\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{6}{\left(3+4\,k^2\right)^2 t_1}$	$\frac{6\,\sqrt{2}}{\left(3+4\,k^2\right)^2 t_1}$	0	$\frac{12\,i\,k}{\left(3+4\,k^2\right)^2 t_1}$
$1^-_\cdot\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{6\,\sqrt{2}}{\left(3+4\,k^2\right)^2 t_1}$	$\frac{12}{\left(3+4\,k^2\right)^2 t_1}$	0	$\frac{12\,i\,\sqrt{2}\,k}{\left(3+4\,k^2\right)^2 t_1}$
$1^-_\cdot\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{12\,i\,k}{\left(3+4\,k^2\right)^2 t_1}$	$-\frac{12\,i\,\sqrt{2}\,k}{\left(3+4\,k^2\right)^2 t_1}$	0	$\frac{24\,k^2}{\left(3+4\,k^2\right)^2 t_1}$

	$2^+_\cdot\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_\cdot\tau^{\parallel}{}_{\alpha\beta}$	$2^-_\cdot\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2}{\left(1+2\,k^2\right)^2 t_1}$	$-\frac{2\,i\,\sqrt{2}\,k}{\left(1+2\,k^2\right)^2 t_1}$	0
$2^+_\cdot\tau^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2\,i\,\sqrt{2}\,k}{\left(1+2\,k^2\right)^2 t_1}$	$\frac{4\,k^2}{\left(1+2\,k^2\right)^2 t_1}$	0
$2^-_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{2}{t_1}$

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
$0^+_\cdot\tau^{\parallel} == 0$	xAct`xTensor`Private`Reconstruct[Symmetry[4, $\partial^{\bullet 2}\partial^{\bullet 1}\tau\,(\Delta+\mathcal{K})^{\bullet 3\bullet 4}$, {•1 → a, •2 → b, •3 → -a, •4 → -b}, StrongGenSet[{1, 2}, GenSet[(1,2)]]], {1, {a , -a , b , -b}}]] == $\partial_\beta\partial^\beta\tau\,(\Delta+\mathcal{K})^{\alpha}{}_{\alpha}$	1
$2\,i\,k\;1^-_\cdot\sigma^{\parallel\,\alpha} + 1^-_\cdot\tau^{\perp\,\alpha} == 0$	$\partial_\chi\partial_\beta\partial^\alpha\tau\,(\Delta+\mathcal{K})^{\beta\chi} + 2\left(\partial_\delta\partial^\delta\partial_\chi\partial^\alpha\sigma^{\beta}{}_{\beta}{}^{\chi} - \partial_\delta\partial^\delta\partial_\chi\partial_\beta\sigma^{\beta\alpha\chi} + \partial_\delta\partial^\delta\partial_\chi\partial^\chi\sigma^{\beta\alpha}{}_{\beta}\right) == \partial_\chi\partial^\chi\partial_\beta\tau\,(\Delta+\mathcal{K})^{\alpha\beta}$	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
$1^-_\cdot\sigma^{\parallel\,\alpha} == 1^-_\cdot\sigma^{\perp\,\alpha}$	$\partial_\chi\partial^\alpha\sigma^{\beta}{}_{\beta}{}^{\chi} + \partial_\chi\partial^\chi\sigma^{\beta\alpha}{}_{\beta} == 0$	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
$-2\,i\,k\;2^+_\cdot\sigma^{\parallel\,\alpha\beta} + 2^+_\cdot\tau^{\parallel\,\alpha\beta} == 0$	$-i\left(4\,\partial_\delta\partial_\chi\partial^\beta\partial^\alpha\tau\,(\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_\delta\partial^\delta\partial_\beta\partial^\alpha\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\alpha\tau\,(\Delta+\mathcal{K})^{\beta\chi} - 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\beta\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + 4\,i\;k^\chi\;\partial_\epsilon\partial_\chi\partial^\beta\partial^\alpha\sigma^{\delta}{}_{\delta}{}^{\epsilon} - 6\,i\;k^\chi\;\partial_\epsilon\partial_\delta\partial_\chi\partial^\beta\sigma^{\delta\alpha\epsilon} + 6\,i\;k^\chi\;\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\sigma^{\alpha\beta\delta} - 6\,i\;k^\chi\;\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\sigma^{\beta\alpha\delta} + 2\;\eta^{\alpha\beta}\;\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\tau\,(\Delta+\mathcal{K})^{\chi\delta} - 2\;\eta^{\alpha\beta}\;\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 4\,i\;\eta^{\alpha\beta}\;k^\chi\;\partial_\phi\partial^\phi\partial_\epsilon\partial_\chi\sigma^{\delta}{}_{\delta}{}^{\epsilon}\right) == 0$	5
Total expected gauge generators:		19

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

$r_2 < 0$ && $t_2 > 0$