PSALTer results panel

$S ==$

$$\int\int\int\int\left(\frac{1}{6}\left(2\,t_1\,\mathcal{A}^{\alpha\,I}{}_{\alpha}\,\mathcal{A}_{I}{}^{\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_I f^{\alpha\,I}+4\,t_1\,\mathcal{A}_{I}{}^{\theta}{}_{\theta}\,\partial^I f^{\alpha}{}_{\alpha}-2\,t_1\,\partial_I f^{\theta}{}_{\theta}\,\partial^I f^{\alpha}{}_{\alpha}-2\,t_1\,\partial_I f^{\alpha\,I}\,\partial_\theta f_{\alpha}{}^{\theta}+4\,t_1\,\partial^I f^{\alpha}{}_{\alpha}\,\partial_\theta f_{I}{}^{\theta}+8\,r_2\,\partial_\beta\mathcal{A}_{\alpha I\theta}\,\partial^\theta\mathcal{A}^{\alpha\beta I}-4\,r_2\,\partial_\beta\mathcal{A}_{\alpha\theta I}\,\partial^\theta\mathcal{A}^{\alpha\beta I}+4\,r_2\,\partial_\beta\mathcal{A}_{I\theta\alpha}\,\partial^\theta\mathcal{A}^{\alpha\beta I}-2\,r_2\,\partial_I\mathcal{A}_{\alpha\beta\theta}\,\partial^\theta\mathcal{A}^{\alpha\beta I}+2\,r_2\,\partial_\theta\mathcal{A}_{\alpha\beta I}\,\partial^\theta\mathcal{A}^{\alpha\beta I}-4\,r_2\,\partial_\theta\mathcal{A}_{\alpha I\beta}\,\partial^\theta\mathcal{A}^{\alpha\beta I}+4\,t_1\,\mathcal{A}_{I\theta\alpha}\,\partial^\theta f^{\alpha I}+4\,t_2\,\mathcal{A}_{I\theta\alpha}\,\partial^\theta f^{\alpha I}-4\,t_1\,\partial_\alpha f_{I\theta}\,\partial^\theta f^{\alpha I}+2\,t_2\,\partial_\alpha f_{I\theta}\,\partial^\theta f^{\alpha I}-4\,t_1\,\partial_\alpha f_{\theta I}\,\partial^\theta f^{\alpha I}-t_2\,\partial_\alpha f_{\theta I}\,\partial^\theta f^{\alpha I}+2\,t_1\,\partial_I f_{\alpha\theta}\,\partial^\theta f^{\alpha I}-t_2\,\partial_I f_{\alpha\theta}\,\partial^\theta f^{\alpha I}+4\,t_1\,\partial_\theta f_{\alpha I}\,\partial^\theta f^{\alpha I}+t_2\,\partial_\theta f_{\alpha I}\,\partial^\theta f^{\alpha I}+2\,t_1\,\partial_\theta f_{I\alpha}\,\partial^\theta f^{\alpha I}-t_2\,\partial_\theta f_{I\alpha}\,\partial^\theta f^{\alpha I}+2\left(t_1+t_2\right)\mathcal{A}_{\alpha I\theta}\left(\mathcal{A}^{\alpha I\theta}+2\,\partial^\theta f^{\alpha I}\right)+2\,\mathcal{A}_{\alpha\theta I}\left(\left(t_1-2\,t_2\right)\mathcal{A}^{\alpha I\theta}+2\left(2\,t_1-t_2\right)\partial^\theta f^{\alpha I}\right)\right)[t,\,x,\,y,\,z]\,dz\,dy\,dx\,dt$$

Wave operator

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

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

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

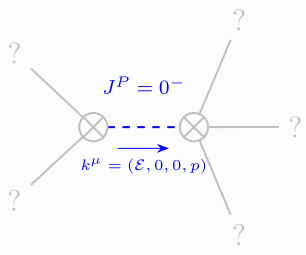
	$1^+_\cdot\sigma^\parallel{}_{\alpha\beta}$	$1^+_\cdot\sigma^\perp{}_{\alpha\beta}$	$1^+_\cdot\tau^\parallel{}_{\alpha\beta}$	$1^-_\cdot\sigma^\parallel{}_{\alpha}$	$1^-_\cdot\sigma^\perp{}_{\alpha}$	$1^-_\cdot\tau^\parallel{}_{\alpha}$	$1^-_\cdot\tau^\perp{}_{\alpha}$
$1^+_\cdot\sigma^\parallel\,\dagger^{\alpha\beta}$	$\frac{2\left(t_1+t_2\right)}{3\,t_1\,t_2}$	$\frac{\sqrt{2}\left(t_1-2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	$\frac{i\,\sqrt{2}\,k\left(t_1-2\,t_2\right)}{3\left(1+k^2\right)t_1\,t_2}$	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
$0^+_\cdot\tau^\parallel == 0$	$\partial_\beta\partial_\alpha\tau(\Delta+\mathcal{K})^{\alpha\beta} == \partial_\beta\partial^\beta\tau(\Delta+\mathcal{K})^{\alpha}{}_{\alpha}$	1
$0^+_\cdot\sigma^\parallel == 0$	$\partial_\beta\sigma^{\alpha}{}_{\alpha}{}^{\beta} == 0$	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
$-2\,i\,k\;2^+_\cdot\sigma^{\parallel\,\alpha\beta}+2^+_\cdot\tau^{\parallel\,\alpha\beta} == 0$	$-i\left(4\,\partial_\delta\partial_\chi\partial^\beta\partial^\alpha\tau(\Delta+\mathcal{K})^{\chi\delta}+2\,\partial_\delta\partial^\delta\partial^\beta\partial^\alpha\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi}-3\,\partial_\delta\partial^\delta\partial_\chi\partial^\alpha\tau(\Delta+\mathcal{K})^{\beta\chi}-3\,\partial_\delta\partial^\delta\partial_\chi\partial^\alpha\tau(\Delta+\mathcal{K})^{\chi\beta}-3\,\partial_\delta\partial^\delta\partial_\chi\partial^\beta\tau(\Delta+\mathcal{K})^{\alpha\chi}-3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi\tau(\Delta+\mathcal{K})^{\alpha\beta}+3\,\partial_\delta\partial^\delta\partial_\chi\partial^\chi\tau(\Delta+\mathcal{K})^{\beta\alpha}+4\,i\,k^\chi\,\partial_\epsilon\partial_\chi\partial^\beta\partial^\alpha\sigma^{\delta}{}_{\delta}{}^{\epsilon}-6\,i\,k^\chi\,\partial_\epsilon\partial_\delta\partial_\chi\partial^\delta\sigma^{\beta\delta\epsilon}-6\,i\,k^\chi\,\partial_\epsilon\partial_\delta\partial_\chi\partial^\beta\sigma^{\delta\alpha\epsilon}+6\,i\,k^\chi\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\sigma^{\alpha\beta\delta}+6\,i\,k^\chi\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\sigma^{\beta\alpha\delta}+2\,\eta^{\alpha\beta}\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial_\chi\tau(\Delta+\mathcal{K})^{\chi\delta}-2\,\eta^{\alpha\beta}\,\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi}-4\,i\,\eta^{\alpha\beta}\,k^\chi\,\partial_\phi\partial^\phi\partial_\epsilon\partial_\chi\sigma^{\delta}{}_{\delta}{}^{\epsilon}\right) == 0$	5
Total expected gauge generators:		20

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

(There are no massless particles)

Gauge symmetries

(Not yet implemented in PSALTer)

Unitarity conditions

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

Validity assumptions

(Not yet implemented in PSALTer)