PSALTer results panel

$S ==$

$$\int\int\int\int\left(\frac{1}{6}\left(2 t_{1.}\ \mathcal{A}^{\alpha\prime}{}_{\alpha}\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}-4 t_{3.}\ \mathcal{A}^{\alpha\prime}{}_{\alpha}\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}+6\ \mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi}+6\ f^{\alpha\beta}\ \tau\,(\Delta+\mathcal{K})_{\alpha\beta}-4 t_{1.}\ \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\ \partial_{\prime}f^{\alpha\prime}+8 t_{3.}\ \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\ \partial_{\prime}f^{\alpha\prime}+4 t_{1.}\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\ \partial^{\prime}f^{\alpha}{}_{\alpha}-8 t_{3.}\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\ \partial^{\prime}f^{\alpha}{}_{\alpha}-2 t_{1.}\ \partial_{\prime}f^{\theta}{}_{\theta}\right.$$
$$\partial^{\prime}f^{\alpha}{}_{\alpha}+4 t_{3.}\ \partial_{\prime}f^{\theta}{}_{\theta}\ \partial^{\prime}f^{\alpha}{}_{\alpha}-2 t_{1.}\ \partial_{\prime}f^{\alpha\prime}\ \partial_{\theta\prime}f_{\alpha}{}^{\theta}+4 t_{3.}\ \partial_{\prime}f^{\alpha\prime}\ \partial_{\theta\prime}f_{\alpha}{}^{\theta}+4 t_{1.}\ \partial^{\prime}f^{\alpha}{}_{\alpha}\ \partial_{\theta\prime}f_{\prime}{}^{\theta}-8 t_{3.}\ \partial^{\prime}f^{\alpha}{}_{\alpha}\ \partial_{\theta\prime}f_{\prime}{}^{\theta}+8 r_{2.}\ \partial_{\beta}\mathcal{A}_{\alpha\prime\theta}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}-4 r_{2.}\ \partial_{\beta}\mathcal{A}_{\alpha\theta\prime}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}+$$
$$4 r_{2.}\ \partial_{\beta}\mathcal{A}_{\prime\theta\alpha}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}-2 r_{2.}\ \partial_{\prime}\mathcal{A}_{\alpha\beta\theta}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}+2 r_{2.}\ \partial_{\theta}\mathcal{A}_{\alpha\beta\prime}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}-4 r_{2.}\ \partial_{\theta}\mathcal{A}_{\alpha\prime\beta}\ \partial^{\theta}\mathcal{A}^{\alpha\beta\prime}+4 t_{1.}\ \mathcal{A}_{\prime\theta\alpha}\ \partial^{\theta}f^{\alpha\prime}+4 t_{2.}\ \mathcal{A}_{\prime\theta\alpha}\ \partial^{\theta}f^{\alpha\prime}-$$
$$4 t_{1.}\ \partial_{\alpha}f_{\prime\theta}\ \partial^{\theta}f^{\alpha\prime}+2 t_{2.}\ \partial_{\alpha}f_{\prime\theta}\ \partial^{\theta}f^{\alpha\prime}-4 t_{1.}\ \partial_{\alpha}f_{\theta\prime}\ \partial^{\theta}f^{\alpha\prime}-t_{2.}\ \partial_{\alpha}f_{\theta\prime}\ \partial^{\theta}f^{\alpha\prime}+2 t_{1.}\ \partial_{\prime}f_{\alpha\theta}\ \partial^{\theta}f^{\alpha\prime}-t_{2.}\ \partial_{\prime}f_{\alpha\theta}\ \partial^{\theta}f^{\alpha\prime}+4 t_{1.}\ \partial_{\theta}f_{\alpha\prime}\ \partial^{\theta}f^{\alpha\prime}+t_{2.}\ \partial_{\theta}f_{\alpha\prime}\ \partial^{\theta}f^{\alpha\prime}+$$
$$\left.\left.2 t_{1.}\ \partial_{\theta}f_{\prime\alpha}\ \partial^{\theta}f^{\alpha\prime}-t_{2.}\ \partial_{\theta}f_{\prime\alpha}\ \partial^{\theta}f^{\alpha\prime}+2\left(t_{1.}+t_{2.}\right)\mathcal{A}_{\alpha\prime\theta}\left(\mathcal{A}^{\alpha\prime\theta}+2\,\partial^{\theta}f^{\alpha\prime}\right)+2\ \mathcal{A}_{\alpha\theta\prime}\left(\left(t_{1.}-2 t_{2.}\right)\mathcal{A}^{\alpha\prime\theta}+2\left(2 t_{1.}-t_{2.}\right)\partial^{\theta}f^{\alpha\prime}\right)\right)\right)[t,\ x,\ y,\ z]\,dz\,dy\,dx\,dt$$

Wave operator

	$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}$	$\overset{0^+}{\cdot}f^{\parallel}$	$\overset{0^+}{\cdot}f^{\perp}$	$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}$
$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	$t_{3.}$	$-i\sqrt{2}\ k t_{3.}$	0	0
$\overset{0^+}{\cdot}f^{\parallel}\,\dagger$	$i\sqrt{2}\ k t_{3.}$	$2k^2 t_{3.}$	0	0
$\overset{0^+}{\cdot}f^{\perp}\,\dagger$	0	0	0	0
$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	$k^2 r_{2.}+t_{2.}$

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

	$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$\overset{2^+}{\cdot}f^{\parallel}{}_{\alpha\beta}$	$\overset{2^-}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{t_{1.}}{2}$	$-\frac{ikt_{1.}}{\sqrt{2}}$	0
$\overset{2^+}{\cdot}f^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{ikt_{1.}}{\sqrt{2}}$	$k^2 t_{1.}$	0
$\overset{2^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{t_{1.}}{2}$

Saturated propagator

	$\overset{0^+}{\cdot}\sigma^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\perp}$	$\overset{0^-}{\cdot}\sigma^{\parallel}$
$\overset{0^+}{\cdot}\sigma^{\parallel}\,\dagger$	$\frac{1}{\left(1+2k^2\right)^2 t_{3.}}$	$-\frac{i\sqrt{2}\ k}{\left(1+2k^2\right)^2 t_{3.}}$	0	0
$\overset{0^+}{\cdot}\tau^{\parallel}\,\dagger$	$\frac{i\sqrt{2}\ k}{\left(1+2k^2\right)^2 t_{3.}}$	$\frac{2k^2}{\left(1+2k^2\right)^2 t_{3.}}$	0	0
$\overset{0^+}{\cdot}\tau^{\perp}\,\dagger$	0	0	0	0
$\overset{0^-}{\cdot}\sigma^{\parallel}\,\dagger$	0	0	0	$\frac{1}{k^2 r_{2.}+t_{2.}}$

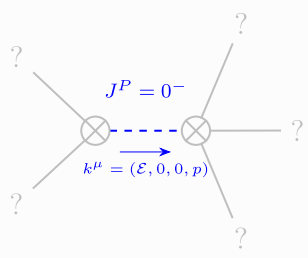
	$\overset{1^+}{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\sigma^{\perp}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$\overset{1^-}{\cdot}\sigma^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\sigma^{\perp}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\perp}{}_{\alpha}$
$\overset{1^+}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2\left(t_{1.}+t_{2.}\right)}{3 t_{1.} t_{2.}}$	$\frac{\sqrt{2}\left(t_{1.}-2 t_{2.}\right)}{3\left(1+k^2\right) t_{1.} t_{2.}}$	$\frac{i\sqrt{2}\ k\left(t_{1.}-2 t_{2.}\right)}{3\left(1+k^2\right) t_{1.} t_{2.}}$	0	0	0	0
$\overset{1^+}{\cdot}\sigma^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\left(t_{1.}-2 t_{2.}\right)}{3\left(1+k^2\right) t_{1.} t_{2.}}$	$\frac{t_{1.}+4 t_{2.}}{3\left(1+k^2\right)^2 t_{1.} t_{2.}}$	$\frac{ik\left(t_{1.}+4 t_{2.}\right)}{3\left(1+k^2\right)^2 t_{1.} t_{2.}}$	0	0	0	0
$\overset{1^+}{\cdot}\tau^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{i\sqrt{2}\ k\left(t_{1.}-2 t_{2.}\right)}{3\left(1+k^2\right) t_{1.} t_{2.}}$	$-\frac{ik\left(t_{1.}+4 t_{2.}\right)}{3\left(1+k^2\right)^2 t_{1.} t_{2.}}$	$\frac{k^2\left(t_{1.}+4 t_{2.}\right)}{3\left(1+k^2\right)^2 t_{1.} t_{2.}}$	0	0	0	0
$\overset{1^-}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{2\left(t_{1.}+t_{3.}\right)}{3 t_{1.} t_{3.}}$	$-\frac{\sqrt{2}\left(t_{1.}-2 t_{3.}\right)}{3\left(1+2k^2\right) t_{1.} t_{3.}}$	0	$-\frac{2ikt_{1.}-4ikt_{3.}}{3 t_{1.} t_{3.}+6k^2 t_{1.} t_{3.}}$
$\overset{1^-}{\cdot}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2}\left(t_{1.}-2 t_{3.}\right)}{3\left(1+2k^2\right) t_{1.} t_{3.}}$	$\frac{t_{1.}+4 t_{3.}}{3\left(1+2k^2\right)^2 t_{1.} t_{3.}}$	0	$\frac{i\sqrt{2}\ k\left(t_{1.}+4 t_{3.}\right)}{3\left(1+2k^2\right)^2 t_{1.} t_{3.}}$
$\overset{1^-}{\cdot}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{2ikt_{1.}-4ikt_{3.}}{3 t_{1.} t_{3.}+6k^2 t_{1.} t_{3.}}$	$-\frac{i\sqrt{2}\ k\left(t_{1.}+4 t_{3.}\right)}{3\left(1+2k^2\right)^2 t_{1.} t_{3.}}$	0	$\frac{2k^2\left(t_{1.}+4 t_{3.}\right)}{3\left(1+2k^2\right)^2 t_{1.} t_{3.}}$

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

Source constraints

Spin-parity form	Covariant form	Multiplicities
$\overset{0^+}{\cdot}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2ik\ \overset{0^+}{\cdot}\sigma^{\parallel}+\overset{0^+}{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha}{}_{\alpha}+2\,\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2ik\ \overset{1^-}{\cdot}\sigma^{\perp}{}^{\alpha}+\overset{1^-}{\cdot}\tau^{\perp}{}^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\beta}+2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3
$\overset{1^-}{\cdot}\tau^{\parallel}{}^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\beta\alpha}$	3
$ik\ \overset{1^+}{\cdot}\sigma^{\perp}{}^{\alpha\beta}+\overset{1^+}{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi}+\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha}+\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta}+2\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta}+2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} ==$ $\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta}+\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi}+\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha}+2\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$-2ik\ \overset{2^+}{\cdot}\sigma^{\parallel}{}^{\alpha\beta}+\overset{2^+}{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$-i\left(4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\delta}+2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi}-3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi}-3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta}-\right.$ $3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi}-3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha}+$ $4i\ k^{\chi}\ \partial_{\epsilon}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon}-6i\ k^{\chi}\ \partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon}-6i\ k^{\chi}\ \partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon}+6i\ k^{\chi}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\alpha\beta\delta}+$ $\left.6i\ k^{\chi}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\beta\alpha\delta}+2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau\,(\Delta+\mathcal{K})^{\chi\delta}-2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi}-4i\ \eta^{\alpha\beta}\ k^{\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\chi}\sigma^{\delta}{}_{\delta}{}^{\epsilon}\right) == 0$	5
Total expected gauge generators:		16

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)