PSALTer results panel

$$S == \int\int\int\int \Big(\mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + f^{\alpha\beta}\ \tau\,(\Delta+\mathcal{K})_{\alpha\beta} - \frac{1}{3}\, r_{._1} \Big(3\,\partial_\beta \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 3\,\partial_\prime \mathcal{A}_{\beta}{}^{\theta}{}_{\theta}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 3\,\partial_\alpha \mathcal{A}^{\alpha\beta\prime}\,\partial_\theta \mathcal{A}_{\beta}{}^{\theta}{}_{\prime} + 6\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\,\partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} + 3\,\partial_\alpha \mathcal{A}^{\alpha\beta\prime}\,\partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 6\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\,\partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} + 4\,\partial_\beta \mathcal{A}_{\alpha\prime\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 2\,\partial_\beta \mathcal{A}_{\alpha\theta\prime}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 8\,\partial_\beta \mathcal{A}_{\prime\theta\alpha}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 2\,\partial_\prime \mathcal{A}_{\alpha\beta\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 2\,\partial_\theta \mathcal{A}_{\alpha\beta\prime}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 2\,\partial_\theta \mathcal{A}_{\alpha\prime\beta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\prime} \Big) + \frac{1}{2}\, t_{._1} \Big(2\,\mathcal{A}^{\alpha\prime}{}_{\alpha}\,\mathcal{A}_{\prime}{}^{\theta}{}_{\theta} - 4\,\mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\,\partial_\prime f^{\alpha\prime} + 4\,\mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\,\partial^{\prime} f^{\alpha}{}_{\alpha} - 2\,\partial_\prime f^{\theta}{}_{\theta}\,\partial^{\prime} f^{\alpha}{}_{\alpha} - 2\,\partial_\prime f^{\alpha\prime}\,\partial_\theta f_{\alpha}{}^{\theta} + 4\,\partial^{\prime} f^{\alpha}{}_{\alpha}\,\partial_\theta f_{\prime}{}^{\theta} - 2\,\partial_\alpha f_{\prime\theta}\,\partial^{\theta} f^{\alpha\prime} - \partial_\alpha f_{\theta\prime}\,\partial^{\theta} f^{\alpha\prime} + \partial_\prime f_{\alpha\theta}\,\partial^{\theta} f^{\alpha\prime} + \partial_\theta f_{\alpha\prime}\,\partial^{\theta} f^{\alpha\prime} + \partial_\theta f_{\prime\alpha}\,\partial^{\theta} f^{\alpha\prime} + 2\,\mathcal{A}_{\alpha\theta\prime}\,\left(\mathcal{A}^{\alpha\prime\theta} + 2\,\partial^{\theta} f^{\alpha\prime}\right) \Big) \Big) [t, x, y, z]\, dt\, dz\, dy\, dx\, dt$$

Wave operator

	$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}$	$\overset{0^+}{\cdot}f^{\parallel}$	$\overset{0^+}{\cdot}f^{\perp}$	$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}$
$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	$-t_{._1}$	$i\sqrt{2}\,k\,t_{._1}$	0	0
$\overset{0^+}{\cdot}f^{\parallel}\,\dagger$	$-i\sqrt{2}\,k\,t_{._1}$	$-2k^2\,t_{._1}$	0	0
$\overset{0^+}{\cdot}f^{\perp}\,\dagger$	0	0	0	0
$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	$-t_{._1}$

	$\overset{1^+}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}f^{\parallel}{}_{\alpha\beta}$	$\overset{1^-}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\mathcal{A}^{\perp}{}_{\alpha}$	$\overset{1^-}{\cdot}f^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}f^{\perp}{}_{\alpha}$
$\overset{1^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$k^2 r_{._1} - \frac{t_{._1}}{2}$	$-\frac{t_{._1}}{\sqrt{2}}$	$-\frac{ikt_{._1}}{\sqrt{2}}$	0	0	0	0
$\overset{1^+}{\cdot}\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{t_{._1}}{\sqrt{2}}$	0	0	0	0	0	0
$\overset{1^+}{\cdot}f^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{ikt_{._1}}{\sqrt{2}}$	0	0	0	0	0	0
$\overset{1^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$-\frac{t_{._1}}{2}$	$\frac{t_{._1}}{\sqrt{2}}$	0	$ikt_{._1}$
$\overset{1^-}{\cdot}\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{t_{._1}}{\sqrt{2}}$	0	0	0
$\overset{1^-}{\cdot}f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}f^{\perp}\,\dagger^{\alpha}$	0	0	0	$-ikt_{._1}$	0	0	0

	$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$\overset{2^+}{\cdot}f^{\parallel}{}_{\alpha\beta}$	$\overset{2^-}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{t_{._1}}{2}$	$-\frac{ikt_{._1}}{\sqrt{2}}$	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	$k^2 r_{._1} + \frac{t_{._1}}{2}$

Saturated propagator

	$\overset{0^+}{\cdot}\sigma^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\perp}$	$\overset{0^-}{\cdot}\sigma^{\parallel}$
$\overset{0^+}{\cdot}\sigma^{\parallel}\,\dagger$	$-\frac{1}{\left(1+2k^2\right)^2 t_{._1}}$	$\frac{i\sqrt{2}\,k}{\left(1+2k^2\right)^2 t_{._1}}$	0	0
$\overset{0^+}{\cdot}\tau^{\parallel}\,\dagger$	$-\frac{i\sqrt{2}\,k}{\left(1+2k^2\right)^2 t_{._1}}$	$-\frac{2k^2}{\left(1+2k^2\right)^2 t_{._1}}$	0	0
$\overset{0^+}{\cdot}\tau^{\perp}\,\dagger$	0	0	0	0
$\overset{0^-}{\cdot}\sigma^{\parallel}\,\dagger$	0	0	0	$-\frac{1}{t_{._1}}$

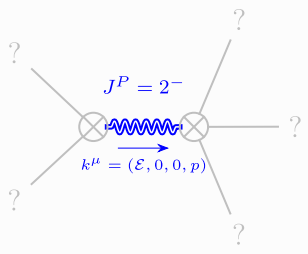
	$\overset{1^+}{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\sigma^{\perp}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$\overset{1^-}{\cdot}\sigma^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\sigma^{\perp}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\perp}{}_{\alpha}$
$\overset{1^+}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	0	$-\frac{\sqrt{2}}{t_{._1}+k^2 t_{._1}}$	$-\frac{i\sqrt{2}\,k}{t_{._1}+k^2 t_{._1}}$	0	0	0	0
$\overset{1^+}{\cdot}\sigma^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{\sqrt{2}}{t_{._1}+k^2 t_{._1}}$	$\frac{-2k^2 r_{._1}+t_{._1}}{\left(1+k^2\right)^2 t_{._1}^2}$	$-\frac{i\left(2k^3 r_{._1}-k t_{._1}\right)}{\left(1+k^2\right)^2 t_{._1}^2}$	0	0	0	0
$\overset{1^+}{\cdot}\tau^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\sqrt{2}\,k}{t_{._1}+k^2 t_{._1}}$	$\frac{i\left(2k^3 r_{._1}-k t_{._1}\right)}{\left(1+k^2\right)^2 t_{._1}^2}$	$\frac{-2k^4 r_{._1}+k^2 t_{._1}}{\left(1+k^2\right)^2 t_{._1}^2}$	0	0	0	0
$\overset{1^-}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	$\frac{\sqrt{2}}{t_{._1}+2k^2 t_{._1}}$	0	$\frac{2ik}{t_{._1}+2k^2 t_{._1}}$
$\overset{1^-}{\cdot}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{\sqrt{2}}{t_{._1}+2k^2 t_{._1}}$	$\frac{1}{\left(1+2k^2\right)^2 t_{._1}}$	0	$\frac{i\sqrt{2}\,k}{\left(1+2k^2\right)^2 t_{._1}}$
$\overset{1^-}{\cdot}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{2ik}{t_{._1}+2k^2 t_{._1}}$	$-\frac{i\sqrt{2}\,k}{\left(1+2k^2\right)^2 t_{._1}}$	0	$\frac{2k^2}{\left(1+2k^2\right)^2 t_{._1}}$

	$\overset{2^+}{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$\overset{2^+}{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$\overset{2^-}{\cdot}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$\overset{2^+}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2}{\left(1+2k^2\right)^2 t_{._1}}$	$-\frac{2i\sqrt{2}\,k}{\left(1+2k^2\right)^2 t_{._1}}$	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	$\frac{2}{2k^2 r_{._1}+t_{._1}}$

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

Massive spectrum



Massive particle

Pole residue:	$-\frac{1}{r_{._1}} > 0$
Square mass:	$-\frac{t_{._1}}{2 r_{._1}} > 0$
Spin:	2
Parity:	Odd

Massless spectrum

(There are no massless particles)

Gauge symmetries

(Not yet implemented in PSALTer)

Unitarity conditions

$r_{._1} < 0\ \&\&\ t_{._1} > 0$

Validity assumptions

(Not yet implemented in PSALTer)