PSALTer results panel

$$\mathcal{S} == \iiiint (\mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + f^{\alpha\beta}\ \tau(\Delta+\mathcal{K})_{\alpha\beta} + \frac{1}{3} r_2 (4\,\partial_\beta \mathcal{A}_{\alpha\iota\theta} - 2\,\partial_\beta \mathcal{A}_{\alpha\theta\iota} + 2\,\partial_\beta \mathcal{A}_{\iota\theta\alpha} - \partial_\iota \mathcal{A}_{\alpha\beta\theta} + \partial_\theta \mathcal{A}_{\alpha\beta\iota} - 2\,\partial_\theta \mathcal{A}_{\alpha\iota\beta})\,\partial^\theta \mathcal{A}^{\alpha\beta\iota} +$$
$$\frac{1}{2} t_1 (2\ \mathcal{A}^{\alpha\iota}{}_{\alpha}\ \mathcal{A}_{\iota}{}^{\theta}{}_{\theta} - 4\ \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\,\partial_\iota f^{\alpha\iota} + 4\ \mathcal{A}_{\iota}{}^{\theta}{}_{\theta}\,\partial^\iota f^{\alpha}{}_{\alpha} - 2\,\partial_\iota f^{\theta}{}_{\theta}\,\partial^\iota f^{\alpha}{}_{\alpha} - 2\,\partial_\iota f^{\alpha\iota}\,\partial_\theta f_{\alpha}{}^{\theta} + 4\,\partial^\iota f^{\alpha}{}_{\alpha}\,\partial_\theta f_{\iota}{}^{\theta} - 2\,\partial_\alpha f_{\iota\theta}\,\partial^\theta f^{\alpha\iota} -$$
$$\partial_\alpha f_{\theta\iota}\,\partial^\theta f^{\alpha\iota} + \partial_\iota f_{\alpha\theta}\,\partial^\theta f^{\alpha\iota} + \partial_\theta f_{\alpha\iota}\,\partial^\theta f^{\alpha\iota} + \partial_\theta f_{\iota\alpha}\,\partial^\theta f^{\alpha\iota} + 2\ \mathcal{A}_{\alpha\theta\iota}\ (\mathcal{A}^{\alpha\iota\theta} + 2\,\partial^\theta f^{\alpha\iota})))[t,x,y,z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^{+}\mathcal{A}^{\parallel}$	$0^{+}f^{\parallel}$	$0^{+}f^{\perp}$	$0^{-}\mathcal{A}^{\parallel}$
$0^{+}\mathcal{A}^{\parallel}\dagger$	$-t_1$	$i\sqrt{2}\,k t_1$	0	0
$0^{+}f^{\parallel}\dagger$	$-i\sqrt{2}\,k t_1$	$-2k^2 t_1$	0	0
$0^{+}f^{\perp}\dagger$	0	0	0	0
$0^{-}\mathcal{A}^{\parallel}\dagger$	0	0	0	$k^2 r_2 - t_1$

	$1^{+}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^{+}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^{+}f^{\parallel}{}_{\alpha\beta}$	$1^{-}\mathcal{A}^{\parallel}{}_{\alpha}$	$1^{-}\mathcal{A}^{\perp}{}_{\alpha}$	$1^{-}f^{\parallel}{}_{\alpha}$	$1^{-}f^{\perp}{}_{\alpha}$
$1^{+}\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{t_1}{2}$	$-\frac{t_1}{\sqrt{2}}$	$-\frac{i k t_1}{\sqrt{2}}$	0	0	0	0
$1^{+}\mathcal{A}^{\perp}\dagger^{\alpha\beta}$	$-\frac{t_1}{\sqrt{2}}$	0	0	0	0	0	0
$1^{+}f^{\parallel}\dagger^{\alpha\beta}$	$\frac{i k t_1}{\sqrt{2}}$	0	0	0	0	0	0
$1^{-}\mathcal{A}^{\parallel}\dagger^{\alpha}$	0	0	0	$-\frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	$i k t_1$
$1^{-}\mathcal{A}^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$1^{-}f^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^{-}f^{\perp}\dagger^{\alpha}$	0	0	0	$-i k t_1$	0	0	0

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

Saturated propagator

	$0^{+}\sigma^{\parallel}$	$0^{+}\tau^{\parallel}$	$0^{+}\tau^{\perp}$	$0^{-}\sigma^{\parallel}$
$0^{+}\sigma^{\parallel}\dagger$	$-\frac{1}{(1+2k^2)^2 t_1}$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_1}$	0	0
$0^{+}\tau^{\parallel}\dagger$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_1}$	$-\frac{2k^2}{(1+2k^2)^2 t_1}$	0	0
$0^{+}\tau^{\perp}\dagger$	0	0	0	0
$0^{-}\sigma^{\parallel}\dagger$	0	0	0	$\frac{1}{k^2 r_2 - t_1}$

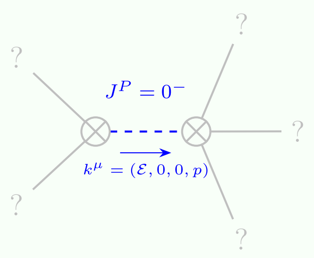
	$1^{+}\sigma^{\parallel}{}_{\alpha\beta}$	$1^{+}\sigma^{\perp}{}_{\alpha\beta}$	$1^{+}\tau^{\parallel}{}_{\alpha\beta}$	$1^{-}\sigma^{\parallel}{}_{\alpha}$	$1^{-}\sigma^{\perp}{}_{\alpha}$	$1^{-}\tau^{\parallel}{}_{\alpha}$	$1^{-}\tau^{\perp}{}_{\alpha}$
$1^{+}\sigma^{\parallel}\dagger^{\alpha\beta}$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

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

Source constraints

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

Massive spectrum



Massive particle

Pole residue:	$-\frac{1}{r_2} > 0$
Square mass:	$\frac{t_1}{r_2} > 0$
Spin:	0
Parity:	Odd

Massless spectrum

(No particles)

Unitarity conditions

$r_2 < 0\ \&\&\ t_1 < 0$