PSALTer results panel

$$\mathcal{S} == \iiiint (\mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + f^{\alpha\beta}\ \tau(\Delta+\mathcal{K})_{\alpha\beta} - \frac{1}{2}\,\alpha_{0}\,(\mathcal{A}_{\alpha\chi\beta}\ \mathcal{A}^{\alpha\beta\chi} + \mathcal{A}^{\alpha\beta}{}_{\alpha}\ \mathcal{A}_{\beta}{}^{\chi}{}_{\chi} + 2\ f^{\alpha\beta}\ \partial_{\beta}\mathcal{A}_{\alpha}{}^{\chi}{}_{\chi} - 2\,\partial_{\beta}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 2\ f^{\alpha\beta}\ \partial_{\chi}\mathcal{A}_{\alpha}{}^{\chi}{}_{\beta} + 2\ f^{\alpha}{}_{\alpha}\ \partial_{\chi}\mathcal{A}^{\beta\chi}{}_{\beta}) + \beta_{1}\,(2\ \mathcal{A}^{\alpha\beta}{}_{\alpha}\ \mathcal{A}_{\beta}{}^{\chi}{}_{\chi} - 4\ \mathcal{A}_{\alpha}{}^{\chi}{}_{\chi}\ \partial_{\beta}f^{\alpha\beta} + 4\ \mathcal{A}_{\beta}{}^{\chi}{}_{\chi}\ \partial^{\beta}f^{\alpha}{}_{\alpha} - 2\,\partial_{\beta}f^{\chi}{}_{\chi}\,\partial^{\beta}f^{\alpha}{}_{\alpha} - 2\,\partial_{\beta}f^{\alpha\beta}\,\partial_{\chi}f_{\alpha}{}^{\chi} + 4\,\partial^{\beta}f^{\alpha}{}_{\alpha}\,\partial_{\chi}f_{\beta}{}^{\chi} - 2\,\partial_{\alpha}f_{\beta\chi}\,\partial^{\chi}f^{\alpha\beta} - \partial_{\alpha}f_{\chi\beta}\,\partial^{\chi}f^{\alpha\beta} + \partial_{\beta}f_{\alpha\chi}\,\partial^{\chi}f^{\alpha\beta} + \partial_{\chi}f_{\alpha\beta}\,\partial^{\chi}f^{\alpha\beta} + \partial_{\chi}f_{\beta\alpha}\,\partial^{\chi}f^{\alpha\beta} + 2\ \mathcal{A}_{\alpha\chi\beta}\ (\mathcal{A}^{\alpha\beta\chi} + 2\,\partial^{\chi}f^{\alpha\beta})) + \frac{1}{3}\,\alpha_{3}\,(4\,\partial_{\beta}\mathcal{A}_{\alpha\chi\delta} - 2\,\partial_{\beta}\mathcal{A}_{\alpha\delta\chi} + 2\,\partial_{\beta}\mathcal{A}_{\chi\delta\alpha} - \partial_{\chi}\mathcal{A}_{\alpha\beta\delta} + \partial_{\delta}\mathcal{A}_{\alpha\beta\chi} - 2\,\partial_{\delta}\mathcal{A}_{\alpha\chi\beta})\,\partial^{\delta}\mathcal{A}^{\alpha\beta\chi})[t, x, y, z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^+_-\mathcal{A}^{\parallel}$	$0^+_-f^{\parallel}$	$0^+_-f^{\perp}$	$0^-_-\mathcal{A}^{\parallel}$
$0^+_-\mathcal{A}^{\parallel}\,\dagger$	$\frac{1}{2}\,(\alpha_{0} - 4\,\beta_{1})$	$-\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{\sqrt{2}}$	0	0
$0^+_-f^{\parallel}\,\dagger$	$\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{\sqrt{2}}$	$-4\,\beta_{1}\,k^2$	0	0
$0^+_-f^{\perp}\,\dagger$	0	0	0	0
$0^-_-\mathcal{A}^{\parallel}\,\dagger$	0	0	0	$\frac{\alpha_{0}}{2} - 2\,\beta_{1} + \alpha_{3}\,k^2$

	$1^+_-\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_-\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_-f^{\parallel}{}_{\alpha\beta}$	$1^-_-\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_-\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_-f^{\parallel}{}_{\alpha}$	$1^-_-f^{\perp}{}_{\alpha}$
$1^+_-\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{4}\,(\alpha_{0} - 4\,\beta_{1})$	$\frac{\alpha_{0}-4\,\beta_{1}}{2\,\sqrt{2}}$	$\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{2\,\sqrt{2}}$	0	0	0	0
$1^+_-\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\alpha_{0}-4\,\beta_{1}}{2\,\sqrt{2}}$	0	0	0	0	0	0
$1^+_-f^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{2\,\sqrt{2}}$	0	0	0	0	0	0
$1^-_-\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{1}{4}\,(\alpha_{0} - 4\,\beta_{1})$	$-\frac{\alpha_{0}-4\,\beta_{1}}{2\,\sqrt{2}}$	0	$-\frac{1}{2}\,i\,(\alpha_{0} - 4\,\beta_{1})\,k$
$1^-_-\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{\alpha_{0}-4\,\beta_{1}}{2\,\sqrt{2}}$	0	0	0
$1^-_-f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_-f^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{1}{2}\,i\,(\alpha_{0} - 4\,\beta_{1})\,k$	0	0	0

	$2^+_-\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_-f^{\parallel}{}_{\alpha\beta}$	$2^-_-\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_-\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{\alpha_{0}}{4} + \beta_{1}$	$\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{2\,\sqrt{2}}$	0
$2^+_-f^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{i\,(\alpha_{0}-4\,\beta_{1})\,k}{2\,\sqrt{2}}$	$2\,\beta_{1}\,k^2$	0
$2^-_-\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$-\frac{\alpha_{0}}{4} + \beta_{1}$

Saturated propagator

	$0^+_-\sigma^{\parallel}$	$0^+_-\tau^{\parallel}$	$0^+_-\tau^{\perp}$	$0^-_-\sigma^{\parallel}$
$0^+_-\sigma^{\parallel}\,\dagger$	$\frac{8\,\beta_{1}}{\alpha_{0}^2 - 4\,\alpha_{0}\,\beta_{1}}$	$-\frac{i\,\sqrt{2}}{\alpha_{0}\,k}$	0	0
$0^+_-\tau^{\parallel}\,\dagger$	$\frac{i\,\sqrt{2}}{\alpha_{0}\,k}$	$-\frac{1}{\alpha_{0}\,k^2}$	0	0
$0^+_-\tau^{\perp}\,\dagger$	0	0	0	0
$0^-_-\sigma^{\parallel}\,\dagger$	0	0	0	$\frac{2}{\alpha_{0} - 4\,\beta_{1} + 2\,\alpha_{3}\,k^2}$

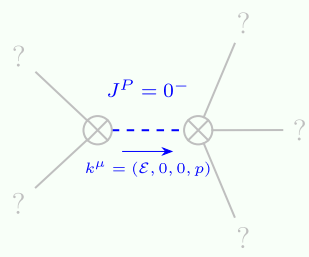
	$1^+_-\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_-\sigma^{\perp}{}_{\alpha\beta}$	$1^+_-\tau^{\parallel}{}_{\alpha\beta}$	$1^-_-\sigma^{\parallel}{}_{\alpha}$	$1^-_-\sigma^{\perp}{}_{\alpha}$	$1^-_-\tau^{\parallel}{}_{\alpha}$	$1^-_-\tau^{\perp}{}_{\alpha}$
$1^+_-\sigma^{\parallel}\,\dagger^{\alpha\beta}$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

	$2^+_-\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_-\tau^{\parallel}{}_{\alpha\beta}$	$2^-_-\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_-\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{16\,\beta_{1}}{\alpha_{0}^2 - 4\,\alpha_{0}\,\beta_{1}}$	$\frac{2\,i\,\sqrt{2}}{\alpha_{0}\,k}$	0
$2^+_-\tau^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{2\,i\,\sqrt{2}}{\alpha_{0}\,k}$	$\frac{2}{\alpha_{0}\,k^2}$	0
$2^-_-\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{1}{-\frac{\alpha_{0}}{4} + \beta_{1}}$

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+_-\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$2\,i\,k\ 1^-_-\sigma^{\perp\,\alpha} + 1^-_-\tau^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	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
Total expected gauge generators:		10

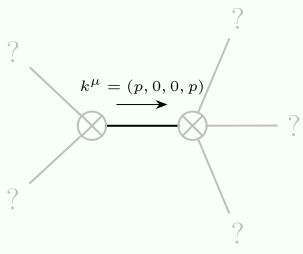
Massive spectrum



Massive particle

Pole residue:	$-\frac{1}{\alpha_{3}} > 0$
Square mass:	$-\frac{\alpha_{0}-4\,\beta_{1}}{2\,\alpha_{3}} > 0$
Spin:	0
Parity:	Odd

Massless spectrum



Massless particle

Pole residue:	$\frac{p^2}{\alpha_{0}} > 0$
Polarisations:	2

Unitarity conditions

$$\alpha_{0} > 0\ \&\&\ \alpha_{3} < 0\ \&\&\ \beta_{1} < \frac{\alpha_{0}}{4}$$