PSALTer results panel

$$S == \int\int\int\int \left(\frac{1}{6} \left(6\, \mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + 6\, f^{\alpha\beta}\ \tau\,(\Delta+\mathcal{K})_{\alpha\beta} + 12\, r_{1}\, \partial_{\beta}\mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 24\, r_{3}\, \partial_{\beta}\mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} + 12\, r_{1}\, \partial_{\prime}\mathcal{A}_{\beta}{}^{\theta}{}_{\theta}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} + 12\, r_{1}\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\prime}\, \partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\prime} - 24\, r_{1}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\prime} + 12\, r_{1}\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\prime}\, \partial_{\theta}\mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 24\, r_{3}\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\prime}\, \partial_{\theta}\mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 24\, r_{1}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\theta}\mathcal{A}_{\prime}{}^{\theta}{}_{\beta} + 48\, r_{3}\, \partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\theta}\mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 8\, r_{1}\, \partial_{\beta}\mathcal{A}_{\alpha\prime\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 8\, r_{2}\, \partial_{\beta}\mathcal{A}_{\alpha\prime\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 4\, r_{1}\, \partial_{\beta}\mathcal{A}_{\alpha\theta\prime}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 4\, r_{2}\, \partial_{\beta}\mathcal{A}_{\alpha\theta\prime}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 8\, r_{1}\, \partial_{\beta}\mathcal{A}_{\prime\theta\alpha}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 4\, r_{2}\, \partial_{\beta}\mathcal{A}_{\prime\theta\alpha}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 24\, r_{3}\, \partial_{\beta}\mathcal{A}_{\prime\theta\alpha}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 4\, r_{1}\, \partial_{\prime}\mathcal{A}_{\alpha\beta\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} - 2\, r_{2}\, \partial_{\prime}\mathcal{A}_{\alpha\beta\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\prime} + 4\, r_{1}\, \partial_{\theta}\mathcal{A}_{\alpha\beta\prime}\, \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_{1}\, \partial_{\theta}\mathcal{A}_{\alpha\prime\beta}\, \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_{2}\, \mathcal{A}_{\prime\theta\alpha}\, \partial^{\theta}f^{\alpha\prime} + 2\, t_{2}\, \partial_{\alpha}f_{\prime\theta}\, \partial^{\theta}f^{\alpha\prime} - t_{2}\, \partial_{\alpha}f_{\theta\prime}\, \partial^{\theta}f^{\alpha\prime} - t_{2}\, \partial_{\prime}f_{\alpha\theta}\, \partial^{\theta}f^{\alpha\prime} + t_{2}\, \partial_{\theta}f_{\alpha\prime}\, \partial^{\theta}f^{\alpha\prime} - t_{2}\, \partial_{\theta}f_{\prime\alpha}\, \partial^{\theta}f^{\alpha\prime} - 4\, t_{2}\, \mathcal{A}_{\alpha\theta\prime}\, \left(\mathcal{A}^{\alpha\prime\theta} + \partial^{\theta}f^{\alpha\prime} \right) + 2\, t_{2}\, \mathcal{A}_{\alpha\prime\theta}\, \left(\mathcal{A}^{\alpha\prime\theta} + 2\, \partial^{\theta}f^{\alpha\prime} \right) \right) \right) [t, x, y, z]\, dz\, dy\, dx\, dt$$

Wave operator

	$0^+_\cdot\mathcal{A}^{\parallel}$	$0^+_\cdot f^{\parallel}$	$0^+_\cdot f^{\perp}$	$0^-_\cdot\mathcal{A}^{\parallel}$
$0^+_\cdot\mathcal{A}^{\parallel}\,\dagger$	$6\,k^2\left(-r_{1}+r_{3}\right)$	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	$k^2 r_{2}+t_{2}$

	$1^+_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_\cdot\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_\cdot f^{\parallel}{}_{\alpha\beta}$	$1^-_\cdot\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_\cdot\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_\cdot f^{\parallel}{}_{\alpha}$	$1^-_\cdot f^{\perp}{}_{\alpha}$
$1^+_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{2\,t_{2}}{3}$	$\frac{\sqrt{2}\,t_{2}}{3}$	$\frac{1}{3}\,i\,\sqrt{2}\,k\,t_{2}$	0	0	0	0
$1^+_\cdot\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\,t_{2}}{3}$	$\frac{t_{2}}{3}$	$\frac{i\,k\,t_{2}}{3}$	0	0	0	0
$1^+_\cdot f^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{1}{3}\,i\,\sqrt{2}\,k\,t_{2}$	$-\frac{1}{3}\,i\,k\,t_{2}$	$\frac{k^2 t_{2}}{3}$	0	0	0	0
$1^-_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$-k^2 r_{1}$	0	0	0
$1^-_\cdot\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot f^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0

	$2^+_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_\cdot f^{\parallel}{}_{\alpha\beta}$	$2^-_\cdot\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^+_\cdot f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^-_\cdot\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$k^2 r_{1}$

Saturated propagator

	$0^+_\cdot\sigma^{\parallel}$	$0^+_\cdot\tau^{\parallel}$	$0^+_\cdot\tau^{\perp}$	$0^-_\cdot\sigma^{\parallel}$
$0^+_\cdot\sigma^{\parallel}\,\dagger$	$\frac{1}{6\,k^2\left(-r_{1}+r_{3}\right)}$	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	$\frac{1}{k^2 r_{2}+t_{2}}$

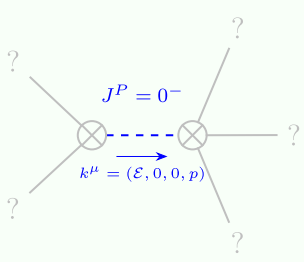
	$1^+_\cdot\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_\cdot\sigma^{\perp}{}_{\alpha\beta}$	$1^+_\cdot\tau^{\parallel}{}_{\alpha\beta}$	$1^-_\cdot\sigma^{\parallel}{}_{\alpha}$	$1^-_\cdot\sigma^{\perp}{}_{\alpha}$	$1^-_\cdot\tau^{\parallel}{}_{\alpha}$	$1^-_\cdot\tau^{\perp}{}_{\alpha}$
$1^+_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{6}{(3+k^2)^2 t_{2}}$	$\frac{3\,\sqrt{2}}{(3+k^2)^2 t_{2}}$	$\frac{3\,i\,\sqrt{2}\,k}{(3+k^2)^2 t_{2}}$	0	0	0	0
$1^+_\cdot\sigma^{\perp}\,\dagger^{\alpha\beta}$	$\frac{3\,\sqrt{2}}{(3+k^2)^2 t_{2}}$	$\frac{3}{(3+k^2)^2 t_{2}}$	$\frac{3\,i\,k}{(3+k^2)^2 t_{2}}$	0	0	0	0
$1^+_\cdot\tau^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{3\,i\,\sqrt{2}\,k}{(3+k^2)^2 t_{2}}$	$-\frac{3\,i\,k}{(3+k^2)^2 t_{2}}$	$\frac{3\,k^2}{(3+k^2)^2 t_{2}}$	0	0	0	0
$1^-_\cdot\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$-\frac{1}{k^2 r_{1}}$	0	0	0
$1^-_\cdot\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_\cdot\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0

	$2^+_\cdot\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_\cdot\tau^{\parallel}{}_{\alpha\beta}$	$2^-_\cdot\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^+_\cdot\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^-_\cdot\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{1}{k^2 r_{1}}$

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
$1^-_\cdot\tau^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\beta}$	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
$1^-_\cdot\sigma^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi} == 0$	3
$i\,k\ 1^+_\cdot\sigma^{\parallel\,\alpha\beta} + 1^+_\cdot\tau^{\parallel\,\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + \partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\alpha\beta\chi} == \partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + \partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\beta\alpha\chi}$	3
$1^+_\cdot\sigma^{\parallel\,\alpha\beta} == 1^+_\cdot\sigma^{\perp\,\alpha\beta}$	$3\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\beta\alpha\chi} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} == 3\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\alpha\beta\chi}$	3
$2^+_\cdot\tau^{\parallel\,\alpha\beta} == 0$	$4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + 2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau\,(\Delta+\mathcal{K})^{\chi\delta} == 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta} + 2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi}$	5
$2^+_\cdot\sigma^{\parallel\,\alpha\beta} == 0$	$3\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 3\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta} + 2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\sigma^{\chi}{}_{\chi}{}^{\delta} == 2\,\partial_{\delta}\partial^{\beta}\partial^{\alpha}\sigma^{\chi}{}_{\chi}{}^{\delta} + 3\left(\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\alpha\beta\chi} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\beta\alpha\chi}\right)$	5
Total expected gauge generators:		27

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

(No particles)

Unitarity conditions

$r_{2} < 0\ \&\&\ t_{2} > 0$