PSALTer results panel

$$\mathcal{S} == \iiint\!\!\int (\tfrac{1}{6}\,(6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 6\,f^{\alpha\beta}\,\tau_{(\Delta+\mathcal{K})\alpha\beta} - 3\,r_{3}\,\partial_{\beta}\mathcal{A}_{\iota}{}^{\theta}{}_{\theta}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 3\,r_{3}\,\partial_{\iota}\mathcal{A}_{\beta}{}^{\theta}{}_{\theta}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha} - 3\,r_{3}\,\partial_{\alpha}\mathcal{A}^{\alpha\beta\iota}\,\partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\iota} + 6\,r_{3}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\,\partial_{\theta}\mathcal{A}_{\beta}{}^{\theta}{}_{\iota} - 3\,r_{3}\,\partial_{\alpha}\mathcal{A}^{\alpha\beta\iota}\,\partial_{\theta}\mathcal{A}_{\iota}{}^{\theta}{}_{\beta} + 6\,r_{3}\,\partial^{\prime}\mathcal{A}^{\alpha\beta}{}_{\alpha}\,\partial_{\theta}\mathcal{A}_{\iota}{}^{\theta}{}_{\beta} + 8\,r_{2}\,\partial_{\beta}\mathcal{A}_{\alpha\iota\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} - 4\,r_{2}\,\partial_{\beta}\mathcal{A}_{\alpha\theta\iota}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 4\,r_{2}\,\partial_{\beta}\mathcal{A}_{\iota\theta\alpha}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} - 24\,r_{3}\,\partial_{\beta}\mathcal{A}_{\iota\theta\alpha}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} - 2\,r_{2}\,\partial_{\iota}\mathcal{A}_{\alpha\beta\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 2\,r_{2}\,\partial_{\theta}\mathcal{A}_{\alpha\beta\iota}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} - 4\,r_{2}\,\partial_{\theta}\mathcal{A}_{\alpha\iota\beta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 6\,r_{5}\,\partial_{\iota}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} - 6\,r_{5}\,\partial_{\theta}\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} + 4\,t_{2}\,\mathcal{A}_{\iota\theta\alpha}\,\partial^{\theta}f^{\alpha\iota} + 2\,t_{2}\,\partial_{\alpha}f_{\iota\theta}\,\partial^{\theta}f^{\alpha\iota} - t_{2}\,\partial_{\alpha}f_{\theta\iota}\,\partial^{\theta}f^{\alpha\iota} - t_{2}\,\partial_{\iota}f_{\alpha\theta}\,\partial^{\theta}f^{\alpha\iota} + t_{2}\,\partial_{\theta}f_{\alpha\iota}\,\partial^{\theta}f^{\alpha\iota} - t_{2}\,\partial_{\theta}f_{\iota\alpha}\,\partial^{\theta}f^{\alpha\iota} - 4\,t_{2}\,\mathcal{A}_{\alpha\theta\iota}\,(\mathcal{A}^{\alpha\iota\theta} + \partial^{\theta}f^{\alpha\iota}) + 2\,t_{2}\,\mathcal{A}_{\alpha\iota\theta}\,(\mathcal{A}^{\alpha\iota\theta} + 2\,\partial^{\theta}f^{\alpha\iota}) - 6\,r_{5}\,\partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\,\partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 12\,r_{5}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\,\partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 6\,r_{5}\,\partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\,\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota} - 12\,r_{5}\,\partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\,\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}))[t, x, y, z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^{+}_{.}\mathcal{A}^{\parallel}$	$0^{+}_{.}f^{\parallel}$	$0^{+}_{.}f^{\perp}$	$0^{-}_{.}\mathcal{A}^{\parallel}$
$0^{+}_{.}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	0
$0^{+}_{.}f^{\parallel}\,\dagger$	0	0	0	0
$0^{+}_{.}f^{\perp}\,\dagger$	0	0	0	0
$0^{-}_{.}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	$k^2\,r_{2} + t_{2}$

	$1^{+}_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^{+}_{.}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^{+}_{.}f^{\parallel}{}_{\alpha\beta}$	$1^{-}_{.}\mathcal{A}^{\parallel}{}_{\alpha}$	$1^{-}_{.}\mathcal{A}^{\perp}{}_{\alpha}$	$1^{-}_{.}f^{\parallel}{}_{\alpha}$	$1^{-}_{.}f^{\perp}{}_{\alpha}$
$1^{+}_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$k^2\,(2\,r_{3} + r_{5}) + \frac{2\,t_{2}}{3}$	$\frac{\sqrt{2}\,t_{2}}{3}$	$\frac{1}{3}\,i\,\sqrt{2}\,k\,t_{2}$	0	0	0	0
$1^{+}_{.}\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$\frac{\sqrt{2}\,t_{2}}{3}$	$\frac{t_{2}}{3}$	$\frac{i\,k\,t_{2}}{3}$	0	0	0	0
$1^{+}_{.}f^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{1}{3}\,i\,\sqrt{2}\,k\,t_{2}$	$-\frac{1}{3}\,i\,k\,t_{2}$	$\frac{k^2\,t_{2}}{3}$	0	0	0	0
$1^{-}_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{1}{2}\,k^2\,(r_{3} + 2\,r_{5})$	0	0	0
$1^{-}_{.}\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^{-}_{.}f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^{-}_{.}f^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0

	$2^{+}_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^{+}_{.}f^{\parallel}{}_{\alpha\beta}$	$2^{-}_{.}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^{+}_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{3\,k^2\,r_{3}}{2}$	0	0
$2^{+}_{.}f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^{-}_{.}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

	$0^{+}_{.}\sigma^{\parallel}$	$0^{+}_{.}\tau^{\parallel}$	$0^{+}_{.}\tau^{\perp}$	$0^{-}_{.}\sigma^{\parallel}$
$0^{+}_{.}\sigma^{\parallel}\,\dagger$	0	0	0	0
$0^{+}_{.}\tau^{\parallel}\,\dagger$	0	0	0	0
$0^{+}_{.}\tau^{\perp}\,\dagger$	0	0	0	0
$0^{-}_{.}\sigma^{\parallel}\,\dagger$	0	0	0	$\frac{1}{k^2\,r_{2} + t_{2}}$

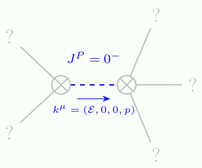
	$1^{+}_{.}\sigma^{\parallel}{}_{\alpha\beta}$	$1^{+}_{.}\sigma^{\perp}{}_{\alpha\beta}$	$1^{+}_{.}\tau^{\parallel}{}_{\alpha\beta}$	$1^{-}_{.}\sigma^{\parallel}{}_{\alpha}$	$1^{-}_{.}\sigma^{\perp}{}_{\alpha}$	$1^{-}_{.}\tau^{\parallel}{}_{\alpha}$	$1^{-}_{.}\tau^{\perp}{}_{\alpha}$
$1^{+}_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{k^2\,(2\,r_{3} + r_{5})}$	$-\frac{\sqrt{2}}{k^2\,(1 + k^2)\,(2\,r_{3} + r_{5})}$	$-\frac{i\,\sqrt{2}}{k\,(1 + k^2)\,(2\,r_{3} + r_{5})}$	0	0	0	0
$1^{+}_{.}\sigma^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{\sqrt{2}}{k^2\,(1 + k^2)\,(2\,r_{3} + r_{5})}$	$\frac{3\,k^2\,(2\,r_{3} + r_{5}) + 2\,t_{2}}{(k + k^3)^2\,(2\,r_{3} + r_{5})\,t_{2}}$	$\frac{i\,(3\,k^2\,(2\,r_{3} + r_{5}) + 2\,t_{2})}{k\,(1 + k^2)^2\,(2\,r_{3} + r_{5})\,t_{2}}$	0	0	0	0
$1^{+}_{.}\tau^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\,\sqrt{2}}{k\,(1 + k^2)\,(2\,r_{3} + r_{5})}$	$-\frac{i\,(3\,k^2\,(2\,r_{3} + r_{5}) + 2\,t_{2})}{k\,(1 + k^2)^2\,(2\,r_{3} + r_{5})\,t_{2}}$	$\frac{3\,k^2\,(2\,r_{3} + r_{5}) + 2\,t_{2}}{(1 + k^2)^2\,(2\,r_{3} + r_{5})\,t_{2}}$	0	0	0	0
$1^{-}_{.}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{2}{k^2\,(r_{3} + 2\,r_{5})}$	0	0	0
$1^{-}_{.}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^{-}_{.}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^{-}_{.}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0

	$2^{+}_{.}\sigma^{\parallel}{}_{\alpha\beta}$	$2^{+}_{.}\tau^{\parallel}{}_{\alpha\beta}$	$2^{-}_{.}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^{+}_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{2}{3\,k^2\,r_{3}}$	0	0
$2^{+}_{.}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$2^{-}_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^{+}_{.}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\alpha\beta} == 0$	1
$0^{+}_{.}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau_{(\Delta+\mathcal{K})}{}^{\alpha}{}_{\alpha}$	1
$0^{+}_{.}\sigma^{\parallel} == 0$	$\partial_{\beta}\sigma^{\alpha\ \beta}_{\ \alpha} == 0$	1
$1^{-}_{.}\tau^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau_{(\Delta+\mathcal{K})}{}^{\alpha\beta}$	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
$1^{-}_{.}\sigma^{\perp\,\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi} == 0$	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
$2^{-}_{.}\sigma^{\parallel\,\alpha\beta\chi} == 0$	$3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon} + 3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta}{}_{\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\alpha\chi\delta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\chi\alpha\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\beta\alpha\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\delta\alpha\beta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\alpha\beta\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi} + 3\ \eta^{\beta\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\ \eta^{\alpha\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\beta\epsilon} + 3\ \eta^{\beta\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\alpha}{}_{\delta} == 3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon} + 3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha}{}_{\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\beta\chi\delta} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\delta\beta\chi} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\alpha\beta\delta} + 2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi} + 4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta} + 3\ \eta^{\alpha\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\beta}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\ \eta^{\beta\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\alpha\epsilon} + 3\ \eta^{\alpha\chi}\ \partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\beta}{}_{\delta}$	5
$2^{+}_{.}\tau^{\parallel\,\alpha\beta} == 0$	$4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\chi\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\chi}{}_{\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau_{(\Delta+\mathcal{K})}{}^{\alpha\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau_{(\Delta+\mathcal{K})}{}^{\beta\alpha} + 2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau_{(\Delta+\mathcal{K})}{}^{\chi\delta} == 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\beta\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau_{(\Delta+\mathcal{K})}{}^{\chi\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau_{(\Delta+\mathcal{K})}{}^{\alpha\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau_{(\Delta+\mathcal{K})}{}^{\chi\alpha} + 2\ \eta^{\alpha\beta}\ \partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau_{(\Delta+\mathcal{K})}{}^{\chi}{}_{\chi}$	5
Total expected gauge generators:			25

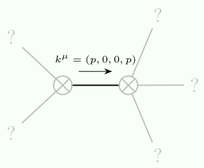
Massive spectrum



Massive particle

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

Massless spectrum



Massless particle

Pole residue:	$-\frac{2}{r_{3}} + \frac{7}{2\,r_{3} + r_{5}} - \frac{24}{r_{3} + 2\,r_{5}} > 0$
Polarisations:	2

Unitarity conditions

$$r_{2} < 0\ \&\&\ t_{2} > 0\ \&\&\ ((r_{3} < 0\ \&\&\ (r_{5} < -\tfrac{r_{3}}{2}\ ||\ r_{5} > -2\,r_{3}))\ ||\ (r_{3} > 0\ \&\&\ -2\,r_{3} < r_{5} < -\tfrac{r_{3}}{2}))$$