PSALTer results panel

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

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	$k^2 r_{2} + t_{2}$

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

	$2^{+}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^{+}f^{\parallel}{}_{\alpha\beta}$	$2^{-}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$2^{+}\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{3k^2 r_{3}}{2}$	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	$\frac{1}{k^2 r_{2}+t_{2}}$

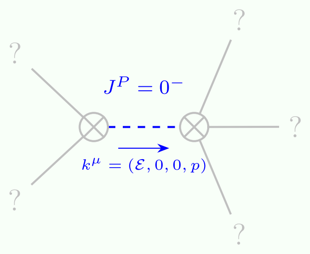
	$1^{+}\sigma^{\parallel}{}_{\alpha\beta}$	$1^{+}\sigma^{\perp}{}_{\alpha\beta}$	$1^{+}\tau^{\parallel}{}_{\alpha\beta}$	$1^{-}\sigma^{\parallel}{}_{\alpha}$	$1^{-}\sigma^{\perp}{}_{\alpha}$	$1^{-}\tau^{\parallel}{}_{\alpha}$	$1^{-}\tau^{\perp}{}_{\alpha}$
$1^{+}\sigma^{\parallel}\dagger^{\alpha\beta}$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

	$2^{+}\sigma^{\parallel}{}_{\alpha\beta}$	$2^{+}\tau^{\parallel}{}_{\alpha\beta}$	$2^{-}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^{+}\sigma^{\parallel}\dagger^{\alpha\beta}$	$-\frac{2}{3k^2 r_{3}}$	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^\beta\sigma^{\delta\alpha\chi} + 2\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\chi\sigma^{\beta\alpha\delta} + 4\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\chi\sigma^{\delta\alpha\beta} + 2\partial_\epsilon\partial^\epsilon\partial_\delta\partial^\delta\sigma^{\alpha\beta\chi} + 3\eta^{\beta\chi}\partial_\phi\partial^\phi\partial_\epsilon\partial^\alpha\sigma^{\delta\ \ \epsilon}_{\ \ \delta} + 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\ \ \epsilon}_{\ \ \delta} + 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

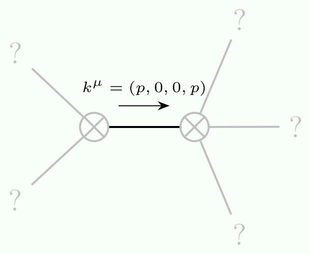
Massive spectrum



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

Unitarity conditions

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