PSALTer results panel

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

Wave operator

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

	$1^+_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_{\cdot}\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_{\cdot}f^{\parallel}{}_{\alpha\beta}$	$1^-_{\cdot}\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_{\cdot}f^{\parallel}{}_{\alpha}$	$1^-_{\cdot}f^{\perp}{}_{\alpha}$
$1^+_{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$k^2\,(2\,r_{1}+r_{5}) + \frac{t_{1}}{6}$	$-\frac{t_{1}}{3\,\sqrt{2}}$	$-\frac{i\,k\,t_{1}}{3\,\sqrt{2}}$	0	0	0	0
$1^+_{\cdot}\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	$-\frac{t_{1}}{3\,\sqrt{2}}$	$\frac{t_{1}}{3}$	$\frac{i\,k\,t_{1}}{3}$	0	0	0	0
$1^+_{\cdot}f^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{i\,k\,t_{1}}{3\,\sqrt{2}}$	$-\frac{1}{3}\,i\,k\,t_{1}$	$\frac{k^2\,t_{1}}{3}$	0	0	0	0
$1^-_{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$k^2\,(r_{1}+r_{5}) - \frac{t_{1}}{2}$	$\frac{t_{1}}{\sqrt{2}}$	0	$i\,k\,t_{1}$
$1^-_{\cdot}\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{t_{1}}{\sqrt{2}}$	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	$-i\,k\,t_{1}$	0	0	0

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

Saturated propagator

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

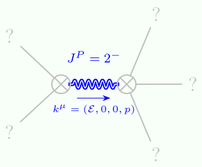
	$1^+_{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_{\cdot}\sigma^{\perp}{}_{\alpha\beta}$	$1^+_{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$1^-_{\cdot}\sigma^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\sigma^{\perp}{}_{\alpha}$	$1^-_{\cdot}\tau^{\parallel}{}_{\alpha}$	$1^-_{\cdot}\tau^{\perp}{}_{\alpha}$
$1^+_{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{k^2\,(2\,r_{1}+r_{5})}$	$\frac{1}{\sqrt{2}\,(k^2+k^4)\,(2\,r_{1}+r_{5})}$	$\frac{i}{\sqrt{2}\,(k+k^3)\,(2\,r_{1}+r_{5})}$	0	0	0	0
$1^+_{\cdot}\sigma^{\perp}\,\dagger^{\alpha\beta}$	$\frac{1}{\sqrt{2}\,(k^2+k^4)\,(2\,r_{1}+r_{5})}$	$\frac{6\,k^2\,(2\,r_{1}+r_{5})+t_{1}}{2\,(k+k^3)^2\,(2\,r_{1}+r_{5})\,t_{1}}$	$\frac{i\,(6\,k^2\,(2\,r_{1}+r_{5})+t_{1})}{2\,k\,(1+k^2)^2\,(2\,r_{1}+r_{5})\,t_{1}}$	0	0	0	0
$1^+_{\cdot}\tau^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{i}{\sqrt{2}\,(k+k^3)\,(2\,r_{1}+r_{5})}$	$-\frac{i\,(6\,k^2\,(2\,r_{1}+r_{5})+t_{1})}{2\,k\,(1+k^2)^2\,(2\,r_{1}+r_{5})\,t_{1}}$	$\frac{6\,k^2\,(2\,r_{1}+r_{5})+t_{1}}{2\,(1+k^2)^2\,(2\,r_{1}+r_{5})\,t_{1}}$	0	0	0	0
$1^-_{\cdot}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	$\frac{\sqrt{2}}{t_{1}+2\,k^2\,t_{1}}$	0	$\frac{2\,i\,k}{t_{1}+2\,k^2\,t_{1}}$
$1^-_{\cdot}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{\sqrt{2}}{t_{1}+2\,k^2\,t_{1}}$	$\frac{-2\,k^2\,(r_{1}+r_{5})+t_{1}}{(t_{1}+2\,k^2\,t_{1})^2}$	0	$-\frac{i\,\sqrt{2}\,k\,(2\,k^2\,(r_{1}+r_{5})-t_{1})}{(t_{1}+2\,k^2\,t_{1})^2}$
$1^-_{\cdot}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$1^-_{\cdot}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{2\,i\,k}{t_{1}+2\,k^2\,t_{1}}$	$\frac{i\,\sqrt{2}\,k\,(2\,k^2\,(r_{1}+r_{5})-t_{1})}{(t_{1}+2\,k^2\,t_{1})^2}$	0	$\frac{-4\,k^4\,(r_{1}+r_{5})+2\,k^2\,t_{1}}{(t_{1}+2\,k^2\,t_{1})^2}$

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

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^-_{\cdot}\sigma^{\parallel} == 0$	$\epsilon\eta_{\alpha\beta\chi\delta}\,\partial^{\delta}\sigma^{\alpha\beta\chi} == 0$	1
$0^+_{\cdot}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2\,i\,k\,0^+_{\cdot}\sigma^{\parallel} + 0^+_{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2\,\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2\,i\,k\,1^-_{\cdot}\sigma^{\perp}{}^{\alpha} + 1^-_{\cdot}\tau^{\perp}{}^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	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
$i\,k\,1^-_{\cdot}\sigma^{\perp}{}^{\alpha\beta} + 1^+_{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} == \partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + 2\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$-2\,i\,k\,2^+_{\cdot}\sigma^{\parallel}{}^{\alpha\beta} + 2^+_{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$-i\,(4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\beta} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + 4\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon} - 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon} - 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon} + 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\alpha\beta\delta} + 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\beta\alpha\delta} + 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau\,(\Delta+\mathcal{K})^{\chi\delta} - 4\,\eta^{\alpha\beta}\,k^{\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\chi}\sigma^{\delta}{}_{\delta}{}^{\epsilon}) == 0$	5
Total expected gauge generators:			17

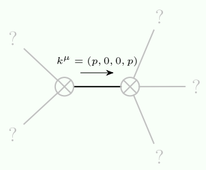
Massive spectrum



Massive particle

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

Massless spectrum



Massless particle

Pole residue:	$\frac{9}{2\,r_{1}+r_{5}} + \frac{2\,p^2\,(t_{1}+(2\,r_{1}+r_{5})\,p^2)}{t_{1}^{\,2}} > 0$
Polarisations:	2

Unitarity conditions

$r_{1} < 0\;\&\&\;r_{5} > -2\,r_{1}\;\&\&\;t_{1} > 0$