PSALTer results panel

$$\mathcal{S} == \int\int\int\int \Big(\frac{1}{6}\,(6\,t_{1.}\,\mathcal{A}^{\alpha\imath}{}_{\alpha}\,\mathcal{A}_{\imath}{}^{\theta}{}_{\theta} + 6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 6\,f^{\alpha\beta}\,\tau(\Delta+\mathcal{K})_{\alpha\beta} - 12\,t_{1.}\,\mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\,\partial_{\imath}f^{\alpha\imath} + 12\,t_{1.}\,\mathcal{A}_{\imath}{}^{\theta}{}_{\theta}\,\partial^{\imath}f^{\alpha}{}_{\alpha} - 6\,t_{1.}\,\partial_{\imath}f^{\theta}{}_{\theta}\,\partial^{\imath}f^{\alpha}{}_{\alpha} - 6\,t_{1.}\,\partial_{\imath}f^{\alpha\imath}\,\partial_{\theta}f_{\alpha}{}^{\theta} + 12\,t_{1.}\,\partial^{\imath}f^{\alpha}{}_{\alpha}\,\partial_{\theta}f_{\imath}{}^{\theta} - 8\,r_{1.}\,\partial_{\beta}\mathcal{A}_{\alpha\imath\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} + 4\,r_{1.}\,\partial_{\beta}\mathcal{A}_{\alpha\theta\imath}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} - 16\,r_{1.}\,\partial_{\beta}\mathcal{A}_{\imath\theta\alpha}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} - 4\,r_{1.}\,\partial_{\imath}\mathcal{A}_{\alpha\beta\theta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} + 4\,r_{1.}\,\partial_{\theta}\mathcal{A}_{\alpha\beta\imath}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} + 4\,r_{1.}\,\partial_{\theta}\mathcal{A}_{\alpha\imath\beta}\,\partial^{\theta}\mathcal{A}^{\alpha\beta\imath} + 6\,r_{5.}\,\partial_{\imath}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\,\partial^{\theta}\mathcal{A}^{\alpha\imath}{}_{\alpha} - 6\,r_{5.}\,\partial_{\theta}\mathcal{A}_{\imath}{}^{\kappa}{}_{\kappa}\,\partial^{\theta}\mathcal{A}^{\alpha\imath}{}_{\alpha} + 4\,t_{1.}\,\mathcal{A}_{\imath\theta\alpha}\,\partial^{\theta}f^{\alpha\imath} + 4\,t_{2.}\,\mathcal{A}_{\imath\theta\alpha}\,\partial^{\theta}f^{\alpha\imath} - 4\,t_{1.}\,\partial_{\alpha}f_{\imath\theta}\,\partial^{\theta}f^{\alpha\imath} + 2\,t_{2.}\,\partial_{\alpha}f_{\imath\theta}\,\partial^{\theta}f^{\alpha\imath} - 4\,t_{1.}\,\partial_{\alpha}f_{\theta\imath}\,\partial^{\theta}f^{\alpha\imath} - t_{2.}\,\partial_{\alpha}f_{\theta\imath}\,\partial^{\theta}f^{\alpha\imath} + 2\,t_{1.}\,\partial_{\imath}f_{\alpha\theta}\,\partial^{\theta}f^{\alpha\imath} - t_{2.}\,\partial_{\imath}f_{\alpha\theta}\,\partial^{\theta}f^{\alpha\imath} + 4\,t_{1.}\,\partial_{\theta}f_{\alpha\imath}\,\partial^{\theta}f^{\alpha\imath} + t_{2.}\,\partial_{\theta}f_{\alpha\imath}\,\partial^{\theta}f^{\alpha\imath} + 2\,t_{1.}\,\partial_{\theta}f_{\imath\alpha}\,\partial^{\theta}f^{\alpha\imath} - t_{2.}\,\partial_{\theta}f_{\imath\alpha}\,\partial^{\theta}f^{\alpha\imath} + 2\,(t_{1.}+t_{2.})\,\mathcal{A}_{\alpha\imath\theta}\,(\mathcal{A}^{\alpha\imath\theta} + 2\,\partial^{\theta}f^{\alpha\imath}) + 2\,\mathcal{A}_{\alpha\theta\imath}\,((t_{1.}-2\,t_{2.})\,\mathcal{A}^{\alpha\imath\theta} + 2\,(2\,t_{1.}-t_{2.})\,\partial^{\theta}f^{\alpha\imath}) - 6\,r_{5.}\,\partial_{\alpha}\mathcal{A}^{\alpha\imath\theta}\,\partial_{\kappa}\mathcal{A}_{\imath}{}^{\kappa}{}_{\theta} + 12\,r_{5.}\,\partial^{\theta}\mathcal{A}^{\alpha\imath}{}_{\alpha}\,\partial_{\kappa}\mathcal{A}_{\imath}{}^{\kappa}{}_{\theta} + 6\,r_{5.}\,\partial_{\alpha}\mathcal{A}^{\alpha\imath\theta}\,\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\imath} - 12\,r_{5.}\,\partial^{\theta}\mathcal{A}^{\alpha\imath}{}_{\alpha}\,\partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\imath})\Big)[t, x, y, z]\,dz\,dy\,dx\,dt$$

Wave operator

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

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

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

Saturated propagator

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

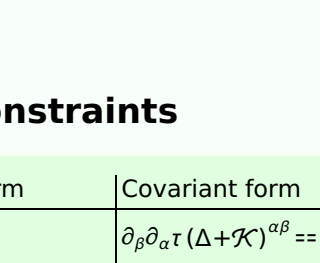
	$1^+_{.}\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_{.}\sigma^{\perp}{}_{\alpha\beta}$	$1^+_{.}\tau^{\parallel}{}_{\alpha\beta}$	$1^-_{.}\sigma^{\parallel}{}_{\alpha}$	$1^-_{.}\sigma^{\perp}{}_{\alpha}$	$1^-_{.}\tau^{\parallel}{}_{\alpha}$	$1^-_{.}\tau^{\perp}{}_{\alpha}$
$1^+_{.}\sigma^{\parallel}\,\dagger^{\alpha\beta}$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

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

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+_{.}\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2\,i\,k\,0^+_{.}\sigma^{\parallel} + 0^+_{.}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2\,\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2\,i\,k\,1^-_{.}\sigma^{\perp\alpha} + 1^-_{.}\tau^{\perp\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	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
$-2\,i\,k\,2^+_{.}\sigma^{\parallel\alpha\beta} + 2^+_{.}\tau^{\parallel\alpha\beta} == 0$	$-i\,(4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\delta} + 2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} - 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha} + 4\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon} - 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon} - 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon} + 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\alpha\beta\delta} + 6\,i\,k^{\chi}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\beta\alpha\delta} + 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau\,(\Delta+\mathcal{K})^{\chi\delta} - 2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau\,(\Delta+\mathcal{K})^{\chi}{}_{\chi} - 4\,i\,\eta^{\alpha\beta}\,k^{\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\chi}\sigma^{\delta}{}_{\delta}{}^{\epsilon}) == 0$	5
Total expected gauge generators:		16

Massive spectrum



Massive particle

Pole residue:	$\frac{-3\,t_{1.}\,t_{2.}\,(t_{1.}+t_{2.})+6\,r_{1.}\,(t_{1.}^2+2\,t_{2.}^2)+3\,r_{5.}\,(t_{1.}^2+2\,t_{2.}^2)}{(2\,r_{1.}+r_{5.})\,(t_{1.}+t_{2.})\,(-3\,t_{1.}\,t_{2.}+4\,r_{1.}\,(t_{1.}+t_{2.})+2\,r_{5.}\,(t_{1.}+t_{2.}))} > 0$
Square mass:	$-\frac{3\,t_{1.}\,t_{2.}}{2\,(2\,r_{1.}+r_{5.})\,(t_{1.}+t_{2.})} > 0$
Spin:	1
Parity:	Even

Massive particle

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

Massless spectrum

(No particles)

Unitarity conditions

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