PSALTer results panel

$$\mathcal{S} == \iiiint \Bigg(\frac{1}{3}\Big(-2 t_3\, \mathcal{A}^{\alpha\iota}{}_{\alpha}\, \mathcal{A}_{\iota}{}^{\theta}{}_{\theta} + 3\, \mathcal{A}^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi} + 3\, f^{\alpha\beta}\, \tau(\Delta+\mathcal{K})_{\alpha\beta} + 4 t_3\, \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\, \partial_{\iota} f^{\alpha\iota} - 4 t_3\, \mathcal{A}_{\iota}{}^{\theta}{}_{\theta}\, \partial^{\iota} f^{\alpha}{}_{\alpha} + 2 t_3\, \partial_{\iota} f^{\theta}{}_{\theta}\, \partial^{\iota} f^{\alpha}{}_{\alpha} +$$
$$2 t_3\, \partial_{\iota} f^{\alpha\iota}\, \partial_{\theta} f_{\alpha}{}^{\theta} - 4 t_3\, \partial^{\iota} f^{\alpha}{}_{\alpha}\, \partial_{\theta} f_{\iota}{}^{\theta} - 4 r_1\, \partial_{\beta}\mathcal{A}_{\alpha\iota\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 2 r_1\, \partial_{\beta}\mathcal{A}_{\alpha\theta\iota}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} - 8 r_1\, \partial_{\beta}\mathcal{A}_{\iota\theta\alpha}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} -$$
$$2 r_1\, \partial_{\iota}\mathcal{A}_{\alpha\beta\theta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 2 r_1\, \partial_{\theta}\mathcal{A}_{\alpha\beta\iota}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 2 r_1\, \partial_{\theta}\mathcal{A}_{\alpha\iota\beta}\, \partial^{\theta}\mathcal{A}^{\alpha\beta\iota} + 3 r_5\, \partial_{\iota}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\, \partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} - 3 r_5\, \partial_{\theta}\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}\, \partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha} -$$
$$3 r_5\, \partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\, \partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 6 r_5\, \partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\, \partial_{\kappa}\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta} + 3 r_5\, \partial_{\alpha}\mathcal{A}^{\alpha\iota\theta}\, \partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota} - 6 r_5\, \partial^{\theta}\mathcal{A}^{\alpha\iota}{}_{\alpha}\, \partial_{\kappa}\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}\Big)\Bigg)[t, x, y, z]\, dz\, dy\, dx\, dt$$

Wave operator

	${}^{0^+}\mathcal{A}^{\parallel}$	${}^{0^+}f^{\parallel}$	${}^{0^+}f^{\perp}$	${}^{0^-}\mathcal{A}^{\parallel}$
${}^{0^+}\mathcal{A}^{\parallel}\,\dagger$	t_3	$-i\sqrt{2}\,k t_3$	0	0
${}^{0^+}f^{\parallel}\,\dagger$	$i\sqrt{2}\,k t_3$	$2k^2 t_3$	0	0
${}^{0^+}f^{\perp}\,\dagger$	0	0	0	0
${}^{0^-}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	0

	${}^{1^+}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	${}^{1^+}\mathcal{A}^{\perp}{}_{\alpha\beta}$	${}^{1^+}f^{\parallel}{}_{\alpha\beta}$	${}^{1^-}\mathcal{A}^{\parallel}{}_{\alpha}$	${}^{1^-}\mathcal{A}^{\perp}{}_{\alpha}$	${}^{1^-}f^{\parallel}{}_{\alpha}$	${}^{1^-}f^{\perp}{}_{\alpha}$
${}^{1^+}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$k^2(2r_1+r_5)$	0	0	0	0	0	0
${}^{1^+}\mathcal{A}^{\perp}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
${}^{1^+}f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
${}^{1^-}\mathcal{A}^{\parallel}\,\dagger^{\alpha}$	0	0	0	$k^2(r_1+r_5)+\frac{2t_3}{3}$	$-\frac{\sqrt{2}\,t_3}{3}$	0	$-\frac{2}{3}\,i\,k t_3$
${}^{1^-}\mathcal{A}^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2}\,t_3}{3}$	$\frac{t_3}{3}$	0	$\frac{1}{3}\,i\sqrt{2}\,k t_3$
${}^{1^-}f^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
${}^{1^-}f^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{2\,i\,k t_3}{3}$	$-\frac{1}{3}\,i\sqrt{2}\,k t_3$	0	$\frac{2k^2 t_3}{3}$

	${}^{2^+}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	${}^{2^+}f^{\parallel}{}_{\alpha\beta}$	${}^{2^-}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
${}^{2^+}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
${}^{2^+}f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
${}^{2^-}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$k^2 r_1$

Saturated propagator

	${}^{0^+}\sigma^{\parallel}$	${}^{0^+}\tau^{\parallel}$	${}^{0^+}\tau^{\perp}$	${}^{0^-}\sigma^{\parallel}$
${}^{0^+}\sigma^{\parallel}\,\dagger$	$\frac{1}{(1+2k^2)^2 t_3}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	0	0
${}^{0^+}\tau^{\parallel}\,\dagger$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3}$	$\frac{2k^2}{(1+2k^2)^2 t_3}$	0	0
${}^{0^+}\tau^{\perp}\,\dagger$	0	0	0	0
${}^{0^-}\sigma^{\parallel}\,\dagger$	0	0	0	0

	${}^{1^+}\sigma^{\parallel}{}_{\alpha\beta}$	${}^{1^+}\sigma^{\perp}{}_{\alpha\beta}$	${}^{1^+}\tau^{\parallel}{}_{\alpha\beta}$	${}^{1^-}\sigma^{\parallel}{}_{\alpha}$	${}^{1^-}\sigma^{\perp}{}_{\alpha}$	${}^{1^-}\tau^{\parallel}{}_{\alpha}$	${}^{1^-}\tau^{\perp}{}_{\alpha}$
${}^{1^+}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{k^2(2r_1+r_5)}$	0	0	0	0	0	0
${}^{1^+}\sigma^{\perp}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
${}^{1^+}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
${}^{1^-}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{1}{k^2(r_1+r_5)}$	$\frac{\sqrt{2}}{k^2(1+2k^2)(r_1+r_5)}$	0	$\frac{2i}{k(1+2k^2)(r_1+r_5)}$
${}^{1^-}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{\sqrt{2}}{k^2(1+2k^2)(r_1+r_5)}$	$\frac{3k^2(r_1+r_5)+2t_3}{(k+2k^3)^2(r_1+r_5)t_3}$	0	$\frac{i\sqrt{2}\,(3k^2(r_1+r_5)+2t_3)}{k(1+2k^2)^2(r_1+r_5)t_3}$
${}^{1^-}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
${}^{1^-}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{2i}{k(1+2k^2)(r_1+r_5)}$	$-\frac{i\sqrt{2}\,(3k^2(r_1+r_5)+2t_3)}{k(1+2k^2)^2(r_1+r_5)t_3}$	0	$\frac{6k^2(r_1+r_5)+4t_3}{(1+2k^2)^2(r_1+r_5)t_3}$

	${}^{2^+}\sigma^{\parallel}{}_{\alpha\beta}$	${}^{2^+}\tau^{\parallel}{}_{\alpha\beta}$	${}^{2^-}\sigma^{\parallel}{}_{\alpha\beta\chi}$
${}^{2^+}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
${}^{2^+}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
${}^{2^-}\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	$\frac{1}{k^2 r_1}$

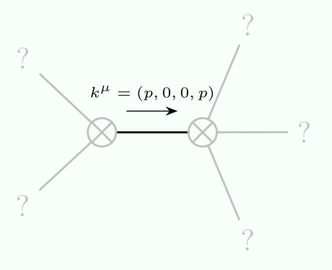
Source constraints

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

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{3}{r_1} - \frac{4}{r_1+r_5} + \frac{9}{2r_1+r_5} > 0$
Polarisations:	2

Unitarity conditions

$$(r_1 < 0\ \&\&\ (r_5 < -r_1\ \|\ r_5 > -2r_1))\ \|\ (r_1 > 0\ \&\&\ -2r_1 < r_5 < -r_1)$$