PSALTer results panel

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

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	0

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

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

	$0^+\,\sigma^{\parallel}$	$0^+\,\tau^{\parallel}$	$0^+\,\tau^{\perp}$	$0^-\,\sigma^{\parallel}$
$0^+\,\sigma^{\parallel}\,\dagger$	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	0

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

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

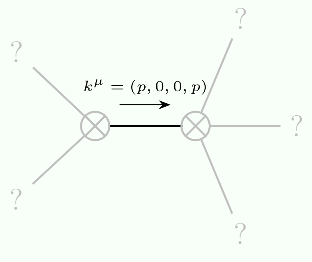
Source constraints

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
$0^+\,\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha}{}_{\alpha}$	1
$0^+\,\sigma^{\parallel} == 0$	$\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta} == 0$	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
$1^+\,\tau^{\parallel\,\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha}$	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:		29

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{3}{r_{1}} - \frac{3}{r_{1} + r_{5}} + \frac{8}{2\,r_{1} + r_{5}} > 0$
Polarisations:	2

Unitarity conditions

$(r_{1} < 0\ \&\&\ (r_{5} < -r_{1}\ \|\|\ r_{5} > -2\,r_{1}))\ \|\|\ (r_{1} > 0\ \&\&\ -2\,r_{1} < r_{5} < -r_{1})$