PSALTer results panel

$$S == \iiiint\Big(\mathcal{A}^{\alpha\beta\chi}{}_{\alpha\beta\chi} + f^{\alpha\beta}{}_{\alpha\beta} - \frac{1}{2}\, r_{\cdot 3}\Big(\partial_\beta \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\, \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} + \partial_{\prime} \mathcal{A}_{\beta}{}^{\theta}{}_{\theta}\, \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha} + \partial_\alpha \mathcal{A}^{\alpha\beta\prime}\, \partial_\theta \mathcal{A}_{\beta}{}^{\theta}{}_{\prime} - 2\, \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_\theta \mathcal{A}_{\beta}{}^{\theta}{}_{\prime} + \partial_\alpha \mathcal{A}^{\alpha\beta\prime}\, \partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} - 2\, \partial^{\prime} \mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_\theta \mathcal{A}_{\prime}{}^{\theta}{}_{\beta} + 8\, \partial_\beta \mathcal{A}_{\prime\theta\alpha}\, \partial^\theta \mathcal{A}^{\alpha\beta\prime}\Big) + r_{\cdot 5}\Big(\partial_{\prime} \mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\, \partial^\theta \mathcal{A}^{\alpha\prime}{}_{\alpha} - \partial_\theta \mathcal{A}_{\prime}{}^{\kappa}{}_{\kappa}\, \partial^\theta \mathcal{A}^{\alpha\prime}{}_{\alpha} - \Big(\partial_\alpha \mathcal{A}^{\alpha\prime\theta} - 2\, \partial^\theta \mathcal{A}^{\alpha\prime}{}_{\alpha}\Big)\Big(\partial_\kappa \mathcal{A}_{\prime}{}^{\kappa}{}_{\theta} - \partial_\kappa \mathcal{A}_{\theta}{}^{\kappa}{}_{\prime}\Big)\Big)\Big)[t,\, x,\, y,\, z]\, dl z\, dl y\, dl x\, dl t$$

Wave operator

	$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}$	$\overset{0^+}{\cdot}f^{\parallel}$	$\overset{0^+}{\cdot}f^{\perp}$	$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}$
$\overset{0^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	0
$\overset{0^+}{\cdot}f^{\parallel}\,\dagger$	0	0	0	0
$\overset{0^+}{\cdot}f^{\perp}\,\dagger$	0	0	0	0
$\overset{0^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger$	0	0	0	0

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

	$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$\overset{2^+}{\cdot}f^{\parallel}{}_{\alpha\beta}$	$\overset{2^-}{\cdot}\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$\overset{2^+}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{3\, k^2\, r_{\cdot 3}}{2}$	0	0
$\overset{2^+}{\cdot}f^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$\overset{2^-}{\cdot}\mathcal{A}^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

Saturated propagator

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

	$\overset{1^+}{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\sigma^{\perp}{}_{\alpha\beta}$	$\overset{1^+}{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$\overset{1^-}{\cdot}\sigma^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\sigma^{\perp}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\parallel}{}_{\alpha}$	$\overset{1^-}{\cdot}\tau^{\perp}{}_{\alpha}$
$\overset{1^+}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$\frac{1}{k^2\left(2\, r_{\cdot 3} + r_{\cdot 5}\right)}$	0	0	0	0	0	0
$\overset{1^+}{\cdot}\sigma^{\perp}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
$\overset{1^+}{\cdot}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha}$	0	0	0	$\frac{2}{k^2\left(r_{\cdot 3} + 2\, r_{\cdot 5}\right)}$	0	0	0
$\overset{1^-}{\cdot}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	0	0	0	0

	$\overset{2^+}{\cdot}\sigma^{\parallel}{}_{\alpha\beta}$	$\overset{2^+}{\cdot}\tau^{\parallel}{}_{\alpha\beta}$	$\overset{2^-}{\cdot}\sigma^{\parallel}{}_{\alpha\beta\chi}$
$\overset{2^+}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta}$	$-\frac{2}{3\, k^2\, r_{\cdot 3}}$	0	0
$\overset{2^+}{\cdot}\tau^{\parallel}\,\dagger^{\alpha\beta}$	0	0	0
$\overset{2^-}{\cdot}\sigma^{\parallel}\,\dagger^{\alpha\beta\chi}$	0	0	0

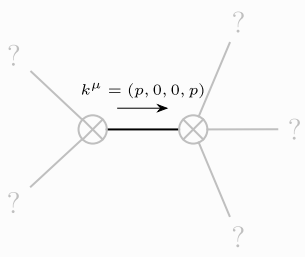
Source constraints

Spin-parity form	Covariant form	Multiplicities
$\overset{0^-}{\cdot}\sigma^{\parallel} == 0$	$\epsilon\eta_{\alpha\beta\chi\delta}\, \partial^\delta \sigma^{\alpha\beta\chi} == 0$	1
$\overset{0^+}{\cdot}\tau^{\perp} == 0$	$\partial_\beta \partial_\alpha \tau\, (\Delta + \mathcal{K})^{\alpha\beta} == 0$	1
$\overset{0^+}{\cdot}\tau^{\parallel} == 0$	$\partial_\beta \partial_\alpha \tau\, (\Delta + \mathcal{K})^{\alpha\beta} == \partial_\beta \partial^\beta \tau\, (\Delta + \mathcal{K})^{\alpha}{}_{\alpha}$	1
$\overset{0^+}{\cdot}\sigma^{\parallel} == 0$	$\partial_\beta \sigma^{\alpha\ \beta}_{\ \alpha} == 0$	1
$\overset{1^-}{\cdot}\tau^{\perp\,\alpha} == 0$	$\partial_\chi \partial_\beta \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \tau\, (\Delta + \mathcal{K})^{\alpha\beta}$	3
$\overset{1^-}{\cdot}\tau^{\parallel\,\alpha} == 0$	$\partial_\chi \partial_\beta \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \tau\, (\Delta + \mathcal{K})^{\beta\alpha}$	3
$\overset{1^-}{\cdot}\sigma^{\perp\,\alpha} == 0$	$\partial_\chi \partial_\beta \sigma^{\beta\alpha\chi} == 0$	3
$\overset{1^+}{\cdot}\tau^{\parallel\,\alpha\beta} == 0$	$\partial_\chi \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\beta\chi} + \partial_\chi \partial^\beta \tau\, (\Delta + \mathcal{K})^{\chi\alpha} + \partial_\chi \partial^\chi \tau\, (\Delta + \mathcal{K})^{\alpha\beta} == \partial_\chi \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\chi\beta} + \partial_\chi \partial^\beta \tau\, (\Delta + \mathcal{K})^{\alpha\chi} + \partial_\chi \partial^\chi \tau\, (\Delta + \mathcal{K})^{\beta\alpha}$	3
$\overset{1^+}{\cdot}\sigma^{\perp\,\alpha\beta} == 0$	$\partial_\delta \partial_\chi \partial^\alpha \sigma^{\chi\beta\delta} + \partial_\delta \partial^\delta \partial_\chi \sigma^{\chi\alpha\beta} == \partial_\delta \partial_\chi \partial^\beta \sigma^{\chi\alpha\delta}$	3
$\overset{2^-}{\cdot}\sigma^{\parallel\,\alpha\beta\chi} == 0$	$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^\delta \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^\delta \sigma^{\alpha\beta\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
$\overset{2^+}{\cdot}\tau^{\parallel\,\alpha\beta} == 0$	$4\, \partial_\delta \partial_\chi \partial^\beta \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\chi\delta} + 2\, \partial_\delta \partial^\delta \partial^\beta \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\chi}{}_{\chi} + 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau\, (\Delta + \mathcal{K})^{\alpha\beta} + 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\chi \tau\, (\Delta + \mathcal{K})^{\beta\alpha} + 2\, \eta^{\alpha\beta}\, \partial_\epsilon \partial^\epsilon \partial_\delta \partial_\chi \tau\, (\Delta + \mathcal{K})^{\chi\delta} == 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\beta\chi} + 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\alpha \tau\, (\Delta + \mathcal{K})^{\chi\beta} + 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau\, (\Delta + \mathcal{K})^{\alpha\chi} + 3\, \partial_\delta \partial^\delta \partial_\chi \partial^\beta \tau\, (\Delta + \mathcal{K})^{\chi\alpha} + 2\, \eta^{\alpha\beta}\, \partial_\epsilon \partial^\epsilon \partial_\delta \partial^\delta \tau\, (\Delta + \mathcal{K})^{\chi}{}_{\chi}$	5
Total expected gauge generators:		29

Massive spectrum

(There are no massive particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{2}{r_{\cdot 3}} + \frac{3}{2\, r_{\cdot 3} + r_{\cdot 5}} - \frac{16}{r_{\cdot 3} + 2\, r_{\cdot 5}} > 0$
Polarisations:	2

Gauge symmetries

(Not yet implemented in PSALTer)

Unitarity conditions

$$\left(r_{\cdot 3} < 0 \;\&\&\; \left(r_{\cdot 5} < -\frac{r_{\cdot 3}}{2} \,\|\, r_{\cdot 5} > -2\, r_{\cdot 3}\right)\right) \| \left(r_{\cdot 3} > 0 \;\&\&\; -2\, r_{\cdot 3} < r_{\cdot 5} < -\frac{r_{\cdot 3}}{2}\right)$$

Validity assumptions

(Not yet implemented in PSALTer)