PSALTer results panel

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

Wave operator

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

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

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

Saturated propagator

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

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

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

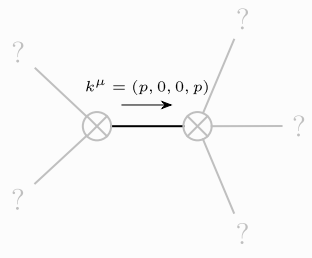
Source constraints

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

Massive spectrum

(There are no massive particles)

Massless spectrum



Massless particle

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

Gauge symmetries

(Not yet implemented in PSALTer)

Unitarity conditions

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

Validity assumptions

(Not yet implemented in PSALTer)