PSALTer results panel

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

Wave operator

$$\begin{array}{c|ccc|c}
 & {}^{0^+}_{\cdot}\mathcal{A}^\parallel & {}^{0^+}_{\cdot}f^\parallel & {}^{0^+}_{\cdot}f^\perp & {}^{0^-}_{\cdot}\mathcal{A}^\parallel \\
\hline
{}^{0^+}_{\cdot}\mathcal{A}^\parallel\dagger & 0 & 0 & 0 & 0 \\
{}^{0^+}_{\cdot}f^\parallel\dagger & 0 & 0 & 0 & 0 \\
{}^{0^+}_{\cdot}f^\perp\dagger & 0 & 0 & 0 & 0 \\
\hline
{}^{0^-}_{\cdot}\mathcal{A}^\parallel\dagger & 0 & 0 & 0 & 0
\end{array}$$

$$\begin{array}{c|ccc|cccc}
 & {}^{1^+}_{\cdot}\mathcal{A}^\parallel{}_{\alpha\beta} & {}^{1^+}_{\cdot}\mathcal{A}^\perp{}_{\alpha\beta} & {}^{1^+}_{\cdot}f^\parallel{}_{\alpha\beta} & {}^{1^-}_{\cdot}\mathcal{A}^\parallel{}_\alpha & {}^{1^-}_{\cdot}\mathcal{A}^\perp{}_\alpha & {}^{1^-}_{\cdot}f^\parallel{}_\alpha & {}^{1^-}_{\cdot}f^\perp{}_\alpha \\
\hline
{}^{1^+}_{\cdot}\mathcal{A}^\parallel\dagger^{\alpha\beta} & k^2\left(2 r_{\underset{1}{\cdot}} + r_{\underset{5}{\cdot}}\right) & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^+}_{\cdot}\mathcal{A}^\perp\dagger^{\alpha\beta} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^+}_{\cdot}f^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline
{}^{1^-}_{\cdot}\mathcal{A}^\parallel\dagger^\alpha & 0 & 0 & 0 & k^2\left(r_{\underset{1}{\cdot}} + r_{\underset{5}{\cdot}}\right) & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}\mathcal{A}^\perp\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}f^\parallel\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}f^\perp\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0
\end{array}$$

$$\begin{array}{c|cc|c}
 & {}^{2^+}_{\cdot}\mathcal{A}^\parallel{}_{\alpha\beta} & {}^{2^+}_{\cdot}f^\parallel{}_{\alpha\beta} & {}^{2^-}_{\cdot}\mathcal{A}^\parallel{}_{\alpha\beta\chi} \\
\hline
{}^{2^+}_{\cdot}\mathcal{A}^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 \\
{}^{2^+}_{\cdot}f^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 \\
\hline
{}^{2^-}_{\cdot}\mathcal{A}^\parallel\dagger^{\alpha\beta\chi} & 0 & 0 & k^2 r_{\underset{1}{\cdot}}
\end{array}$$

Saturated propagator

$$\begin{array}{c|ccc|c}
 & {}^{0^+}_{\cdot}\sigma^\parallel & {}^{0^+}_{\cdot}\tau^\parallel & {}^{0^+}_{\cdot}\tau^\perp & {}^{0^-}_{\cdot}\sigma^\parallel \\
\hline
{}^{0^+}_{\cdot}\sigma^\parallel\dagger & 0 & 0 & 0 & 0 \\
{}^{0^+}_{\cdot}\tau^\parallel\dagger & 0 & 0 & 0 & 0 \\
{}^{0^+}_{\cdot}\tau^\perp\dagger & 0 & 0 & 0 & 0 \\
\hline
{}^{0^-}_{\cdot}\sigma^\parallel\dagger & 0 & 0 & 0 & 0
\end{array}$$

$$\begin{array}{c|ccc|cccc}
 & {}^{1^+}_{\cdot}\sigma^\parallel{}_{\alpha\beta} & {}^{1^+}_{\cdot}\sigma^\perp{}_{\alpha\beta} & {}^{1^+}_{\cdot}\tau^\parallel{}_{\alpha\beta} & {}^{1^-}_{\cdot}\sigma^\parallel{}_\alpha & {}^{1^-}_{\cdot}\sigma^\perp{}_\alpha & {}^{1^-}_{\cdot}\tau^\parallel{}_\alpha & {}^{1^-}_{\cdot}\tau^\perp{}_\alpha \\
\hline
{}^{1^+}_{\cdot}\sigma^\parallel\dagger^{\alpha\beta} & \frac{1}{k^2\left(2 r_{\underset{1}{\cdot}} + r_{\underset{5}{\cdot}}\right)} & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^+}_{\cdot}\sigma^\perp\dagger^{\alpha\beta} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^+}_{\cdot}\tau^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\hline
{}^{1^-}_{\cdot}\sigma^\parallel\dagger^\alpha & 0 & 0 & 0 & \frac{1}{k^2\left(r_{\underset{1}{\cdot}} + r_{\underset{5}{\cdot}}\right)} & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}\sigma^\perp\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}\tau^\parallel\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
{}^{1^-}_{\cdot}\tau^\perp\dagger^\alpha & 0 & 0 & 0 & 0 & 0 & 0 & 0
\end{array}$$

$$\begin{array}{c|cc|c}
 & {}^{2^+}_{\cdot}\sigma^\parallel{}_{\alpha\beta} & {}^{2^+}_{\cdot}\tau^\parallel{}_{\alpha\beta} & {}^{2^-}_{\cdot}\sigma^\parallel{}_{\alpha\beta\chi} \\
\hline
{}^{2^+}_{\cdot}\sigma^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 \\
{}^{2^+}_{\cdot}\tau^\parallel\dagger^{\alpha\beta} & 0 & 0 & 0 \\
\hline
{}^{2^-}_{\cdot}\sigma^\parallel\dagger^{\alpha\beta\chi} & 0 & 0 & \frac{1}{k^2 r_{\underset{1}{\cdot}}}
\end{array}$$

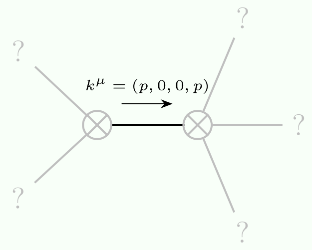
Source constraints

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
${}^{0^+}_{\cdot}\sigma^\parallel == 0$	$\partial_\beta\sigma^\alpha{}_\alpha{}^\beta == 0$	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
${}^{2^+}_{\cdot}\sigma^\parallel{}^{\alpha\beta} == 0$	$3\,\partial_\delta\partial_\chi\partial^\alpha\sigma^{\chi\beta\delta} + 3\,\partial_\delta\partial_\chi\partial^\beta\sigma^{\chi\alpha\delta} + 2\ \eta^{\alpha\beta}\ \partial_\epsilon\partial^\epsilon\partial_\delta\sigma^\chi{}_\chi{}^\delta ==$ $2\,\partial_\delta\partial^\beta\partial^\alpha\sigma^\chi{}_\chi{}^\delta + 3\left(\partial_\delta\partial^\delta\partial_\chi\sigma^{\alpha\beta\chi} + \partial_\delta\partial^\delta\partial_\chi\sigma^{\beta\alpha\chi}\right)$	5
Total expected gauge generators:		29

Massive spectrum

(No particles)

Massless spectrum



Massless particle

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

Unitarity conditions

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