PSALTer results panel

$$\mathcal{S} == \int\int\int\int \Big(\mathcal{A}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi} + f^{\alpha\beta}\ \tau\,(\Delta+\mathcal{K})_{\alpha\beta} - \frac{2}{3}\, t_{\cdot 3} \Big(\mathcal{A}^{\alpha\prime}{}_{\alpha}\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta} - 2\ \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta}\ \partial_{\prime} f^{\alpha\prime} + 2\ \mathcal{A}_{\prime}{}^{\theta}{}_{\theta}\ \partial^{\prime} f^{\alpha}{}_{\alpha} - \partial_{\prime} f^{\theta}{}_{\theta}\ \partial^{\prime} f^{\alpha}{}_{\alpha} - \partial_{\prime} f^{\alpha\prime}\ \partial_{\theta} f_{\alpha}{}^{\theta} + 2\ \partial^{\prime} f^{\alpha}{}_{\alpha}\ \partial_{\theta} f_{\prime}{}^{\theta} \Big) - \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]\, dz\, dy\, dx\, dt$$

Wave operator

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

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

	$\overset{0^+}{\cdot}\sigma^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\parallel}$	$\overset{0^+}{\cdot}\tau^{\perp}$	$\overset{0^-}{\cdot}\sigma^{\parallel}$
$\overset{0^+}{\cdot}\sigma^{\parallel}\,\dagger$	$\frac{1}{\left(1+2k^2\right)^2 t_{\cdot 3}}$	$-\frac{i\sqrt{2}\ k}{\left(1+2k^2\right)^2 t_{\cdot 3}}$	0	0
$\overset{0^+}{\cdot}\tau^{\parallel}\,\dagger$	$\frac{i\sqrt{2}\ k}{\left(1+2k^2\right)^2 t_{\cdot 3}}$	$\frac{2k^2}{\left(1+2k^2\right)^2 t_{\cdot 3}}$	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	$\frac{2}{k^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right)}$	$\frac{2\sqrt{2}}{k^2 \left(1+2k^2\right) \left(r_{\cdot 3} + 2 r_{\cdot 5}\right)}$	0	$\frac{4 i}{k \left(1+2k^2\right) \left(r_{\cdot 3} + 2 r_{\cdot 5}\right)}$
$\overset{1^-}{\cdot}\sigma^{\perp}\,\dagger^{\alpha}$	0	0	0	$\frac{2\sqrt{2}}{k^2 \left(1+2k^2\right) \left(r_{\cdot 3} + 2 r_{\cdot 5}\right)}$	$\frac{3 k^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) + 4 t_{\cdot 3}}{\left(k + 2k^3\right)^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) t_{\cdot 3}}$	0	$\frac{i\sqrt{2} \left(3 k^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) + 4 t_{\cdot 3}\right)}{k \left(1+2k^2\right)^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) t_{\cdot 3}}$
$\overset{1^-}{\cdot}\tau^{\parallel}\,\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{1^-}{\cdot}\tau^{\perp}\,\dagger^{\alpha}$	0	0	0	$-\frac{4 i}{k \left(1+2k^2\right) \left(r_{\cdot 3} + 2 r_{\cdot 5}\right)}$	$-\frac{i\sqrt{2} \left(3 k^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) + 4 t_{\cdot 3}\right)}{k \left(1+2k^2\right)^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) t_{\cdot 3}}$	0	$\frac{6 k^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) + 8 t_{\cdot 3}}{\left(1+2k^2\right)^2 \left(r_{\cdot 3} + 2 r_{\cdot 5}\right) t_{\cdot 3}}$

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

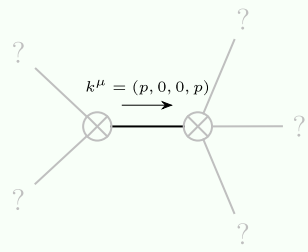
Source constraints

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
$-2\, i\, k\ \overset{0^+}{\cdot}\sigma^{\parallel} + \overset{0^+}{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2\ \partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha\ \beta}_{\ \alpha}$	1
$2\, i\, k\ \overset{1^-}{\cdot}\sigma^{\perp}{}^{\alpha} + \overset{1^-}{\cdot}\tau^{\perp}{}^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} + 2\ \partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	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
$\overset{1^+}{\cdot}\tau^{\parallel}{}^{\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\chi}\partial^{\alpha}\tau\,(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau\,(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau\,(\Delta+\mathcal{K})^{\beta\alpha}$	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^{\beta}\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^{\beta}\sigma^{\delta\alpha\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:			25

Massive spectrum

(No particles)

Massless spectrum



Massless particle

Pole residue:	$-\frac{26}{r_{\cdot 3}} + \frac{39}{2 r_{\cdot 3} + r_{\cdot 5}} - \frac{216}{r_{\cdot 3} + 2 r_{\cdot 5}} > 0$
Polarisations:	2

Unitarity conditions

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