PSALTer results panel

$$\mathcal{S} == \int\int\int\int (\frac{1}{6}(-4 t_3 \mathcal{A}^{\alpha\prime}{}_{\alpha} \mathcal{A}_{\prime}{}^{\theta}{}_{\theta} + 6 \mathcal{A}^{\alpha\beta\chi} \sigma_{\alpha\beta\chi} + 6 f^{\alpha\beta} \tau(\Delta+\mathcal{K})_{\alpha\beta} + 8 t_3 \mathcal{A}_{\alpha}{}^{\theta}{}_{\theta} \partial_{\prime} f^{\alpha\prime} - 8 t_3 \mathcal{A}_{\prime}{}^{\theta}{}_{\theta} \partial^{\prime} f^{\alpha}{}_{\alpha} + 4 t_3 \partial_{\prime} f^{\theta}{}_{\theta} \partial^{\prime} f^{\alpha}{}_{\alpha} + 4 t_3 \partial_{\prime} f^{\alpha\prime} \partial_{\theta} f_{\alpha}{}^{\theta} - 8 t_3 \partial^{\prime} f^{\alpha}{}_{\alpha} \partial_{\theta} f_{\prime}{}^{\theta} +$$
$$8 r_2 \partial_{\beta} \mathcal{A}_{\alpha\prime\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\prime} - 4 r_2 \partial_{\beta} \mathcal{A}_{\alpha\theta\prime} \partial^{\theta} \mathcal{A}^{\alpha\beta\prime} + 4 r_2 \partial_{\beta} \mathcal{A}_{\prime\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta\prime} - 2 r_2 \partial_{\prime} \mathcal{A}_{\alpha\beta\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\prime} + 2 r_2 \partial_{\theta} \mathcal{A}_{\alpha\beta\prime} \partial^{\theta} \mathcal{A}^{\alpha\beta\prime} - 4 r_2 \partial_{\theta} \mathcal{A}_{\alpha\prime\beta} \partial^{\theta} \mathcal{A}^{\alpha\prime}{}_{\alpha} + 6 r_5 \partial_{\prime} \mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa} \partial^{\theta} \mathcal{A}^{\alpha\prime}{}_{\alpha} -$$
$$6 r_5 \partial_{\theta} \mathcal{A}_{\prime}{}^{\kappa}{}_{\kappa} \partial^{\theta} \mathcal{A}^{\alpha\prime}{}_{\alpha} + 4 t_2 \mathcal{A}_{\prime\theta\alpha} \partial^{\theta} f^{\alpha\prime} + 2 t_2 \partial_{\alpha} f_{\prime\theta} \partial^{\theta} f^{\alpha\prime} - t_2 \partial_{\alpha} f_{\theta\prime} \partial^{\theta} f^{\alpha\prime} - t_2 \partial_{\prime} f_{\alpha\theta} \partial^{\theta} f^{\alpha\prime} + t_2 \partial_{\theta} f_{\alpha\prime} \partial^{\theta} f^{\alpha\prime} - t_2 \partial_{\theta} f_{\prime\alpha} \partial^{\theta} f^{\alpha\prime} - 4 t_2 \mathcal{A}_{\alpha\theta\prime} (\mathcal{A}^{\alpha\prime\theta} + \partial^{\theta} f^{\alpha\prime}) +$$
$$2 t_2 \mathcal{A}_{\alpha\prime\theta} (\mathcal{A}^{\alpha\prime\theta} + 2 \partial^{\theta} f^{\alpha\prime}) - 6 r_5 \partial_{\alpha} \mathcal{A}^{\alpha\prime\theta} \partial_{\kappa} \mathcal{A}_{\prime}{}^{\kappa}{}_{\theta} + 12 r_5 \partial^{\theta} \mathcal{A}^{\alpha\prime}{}_{\alpha} \partial_{\kappa} \mathcal{A}_{\prime}{}^{\kappa}{}_{\theta} + 6 r_5 \partial_{\alpha} \mathcal{A}^{\alpha\prime\theta} \partial_{\kappa} \mathcal{A}_{\theta}{}^{\kappa}{}_{\prime} - 12 r_5 \partial^{\theta} \mathcal{A}^{\alpha\prime}{}_{\alpha} \partial_{\kappa} \mathcal{A}_{\theta}{}^{\kappa}{}_{\prime}))[t, x, y, z] dz\, dy\, dx\, dt$$

Wave operator

	$0^+_.\mathcal{A}^{\parallel}$	$0^+_.f^{\parallel}$	$0^+_.f^{\perp}$	$0^-_.\mathcal{A}^{\parallel}$	$1^+_.\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$1^+_.\mathcal{A}^{\perp}{}_{\alpha\beta}$	$1^+_.f^{\parallel}{}_{\alpha\beta}$	$1^-_.\mathcal{A}^{\parallel}{}_{\alpha}$	$1^-_.\mathcal{A}^{\perp}{}_{\alpha}$	$1^-_.f^{\parallel}{}_{\alpha}$	$1^-_.f^{\perp}{}_{\alpha}$	$2^+_.\mathcal{A}^{\parallel}{}_{\alpha\beta}$	$2^+_.f^{\parallel}{}_{\alpha\beta}$	$2^-_.\mathcal{A}^{\parallel}{}_{\alpha\beta\chi}$
$0^+_.\mathcal{A}^{\parallel}\dagger$	t_3	$-i\sqrt{2}\,k t_3$	0	0										
$0^+_.f^{\parallel}\dagger$	$i\sqrt{2}\,k t_3$	$2k^2 t_3$	0	0										
$0^+_.f^{\perp}\dagger$	0	0	0	0										
$0^-_.\mathcal{A}^{\parallel}\dagger$	0	0	0	$k^2 r_2 + t_2$										
$1^+_.\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$					$k^2 r_5 + \frac{2t_2^2}{3}$	$\frac{\sqrt{2}\,t_2^2}{3}$	$\frac{1}{3} i\sqrt{2}\,k t_2$	0	0	0	0			
$1^+_.\mathcal{A}^{\perp}\dagger^{\alpha\beta}$					$\frac{\sqrt{2}\,t_2^2}{3}$	$\frac{t_2^2}{3}$	$\frac{i k t_2^2}{3}$	0	0	0	0			
$1^+_.f^{\parallel}\dagger^{\alpha\beta}$					$-\frac{1}{3} i\sqrt{2}\,k t_2$	$-\frac{1}{3} i k t_2$	$\frac{k^2 t_2^2}{3}$	0	0	0	0			
$1^-_.\mathcal{A}^{\parallel}\dagger^{\alpha}$					0	0	0	$k^2 r_5 + \frac{2t_3^2}{3}$	$-\frac{\sqrt{2}\,t_3^2}{3}$	0	$-\frac{2}{3} i k t_3^2$			
$1^-_.\mathcal{A}^{\perp}\dagger^{\alpha}$					0	0	0	$-\frac{\sqrt{2}\,t_3^2}{3}$	$\frac{t_3^2}{3}$	0	$\frac{1}{3} i\sqrt{2}\,k t_3^2$			
$1^-_.f^{\parallel}\dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_.f^{\perp}\dagger^{\alpha}$					0	0	0	$\frac{2 i k t_3^2}{3}$	$-\frac{1}{3} i\sqrt{2}\,k t_3^2$	0	$\frac{2k^2 t_3^2}{3}$			
$2^+_.\mathcal{A}^{\parallel}\dagger^{\alpha\beta}$												0	0	0
$2^+_.f^{\parallel}\dagger^{\alpha\beta}$												0	0	0
$2^-_.\mathcal{A}^{\parallel}\dagger^{\alpha\beta\chi}$												0	0	0

Saturated propagator

	$0^+_.\sigma^{\parallel}$	$0^+_.\tau^{\parallel}$	$0^+_.\tau^{\perp}$	$0^-_.\sigma^{\parallel}$	$1^+_.\sigma^{\parallel}{}_{\alpha\beta}$	$1^+_.\sigma^{\perp}{}_{\alpha\beta}$	$1^+_.\tau^{\parallel}{}_{\alpha\beta}$	$1^-_.\sigma^{\parallel}{}_{\alpha}$	$1^-_.\sigma^{\perp}{}_{\alpha}$	$1^-_.\tau^{\parallel}{}_{\alpha}$	$1^-_.\tau^{\perp}{}_{\alpha}$	$2^+_.\sigma^{\parallel}{}_{\alpha\beta}$	$2^+_.\tau^{\parallel}{}_{\alpha\beta}$	$2^-_.\sigma^{\parallel}{}_{\alpha\beta\chi}$
$0^+_.\sigma^{\parallel}\dagger$	$\frac{1}{(1+2k^2)^2 t_3^2}$	$-\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3^2}$	0	0										
$0^+_.\tau^{\parallel}\dagger$	$\frac{i\sqrt{2}\,k}{(1+2k^2)^2 t_3^2}$	$\frac{2k^2}{(1+2k^2)^2 t_3^2}$	0	0										
$0^+_.\tau^{\perp}\dagger$	0	0	0	0										
$0^-_.\sigma^{\parallel}\dagger$	0	0	0	$\frac{1}{k^2 r_2 + t_2}$										
$1^+_.\sigma^{\parallel}\dagger^{\alpha\beta}$					$\frac{1}{k^2 r_5}$	$-\frac{\sqrt{2}}{k^2 r_5 + k^4 r_5}$	$-\frac{i\sqrt{2}}{k r_5 + k^3 r_5}$	0	0	0	0			
$1^+_.\sigma^{\perp}\dagger^{\alpha\beta}$					$-\frac{\sqrt{2}}{k^2 r_5 + k^4 r_5}$	$\frac{3k^2 r_5 + 2t_2^2}{(k+k^3)^2 r_5 t_2^2}$	$\frac{i(3k^2 r_5 + 2t_2^2)}{k(1+k^2)^2 r_5 t_2^2}$	0	0	0	0			
$1^+_.\tau^{\parallel}\dagger^{\alpha\beta}$					$\frac{i\sqrt{2}}{k r_5 + k^3 r_5}$	$-\frac{i(3k^2 r_5 + 2t_2^2)}{k(1+k^2)^2 r_5 t_2^2}$	$\frac{3k^2 r_5 + 2t_2^2}{(1+k^2)^2 r_5 t_2^2}$	0	0	0	0			
$1^-_.\sigma^{\parallel}\dagger^{\alpha}$					0	0	0	$\frac{1}{k^2 r_5}$	$\frac{\sqrt{2}}{k^2 r_5 + 2k^4 r_5}$	0	$\frac{2i}{k r_5 + 2k^3 r_5}$			
$1^-_.\sigma^{\perp}\dagger^{\alpha}$					0	0	0	$\frac{\sqrt{2}}{k^2 r_5 + 2k^4 r_5}$	$\frac{3k^2 r_5 + 2t_3^2}{(k+2k^3)^2 r_5 t_3^2}$	0	$\frac{i\sqrt{2}(3k^2 r_5 + 2t_3^2)}{k(1+2k^2)^2 r_5 t_3^2}$			
$1^-_.\tau^{\parallel}\dagger^{\alpha}$					0	0	0	0	0	0	0			
$1^-_.\tau^{\perp}\dagger^{\alpha}$					0	0	0	$-\frac{2i}{k r_5 + 2k^3 r_5}$	$-\frac{i\sqrt{2}(3k^2 r_5 + 2t_3^2)}{k(1+2k^2)^2 r_5 t_3^2}$	0	$\frac{6k^2 r_5 + 4t_3^2}{(1+2k^2)^2 r_5 t_3^2}$			
$2^+_.\sigma^{\parallel}\dagger^{\alpha\beta}$												0	0	0
$2^+_.\tau^{\parallel}\dagger^{\alpha\beta}$												0	0	0
$2^-_.\sigma^{\parallel}\dagger^{\alpha\beta\chi}$												0	0	0

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+_.\tau^{\perp} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == 0$	1
$-2 i k\, 0^+_.\sigma^{\parallel} + 0^+_.\tau^{\parallel} == 0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta} == \partial_{\beta}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha}{}_{\alpha} + 2\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}{}_{\alpha}{}^{\beta}$	1
$2 i k\, 1^-_.\sigma^{\perp\alpha} + 1^-_.\tau^{\perp\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	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
$i k\, 1^+_.\sigma^{\perp\alpha\beta} + 1^+_.\tau^{\parallel\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} == \partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta} + \partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi} + \partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha} + 2\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$2^-_.\sigma^{\parallel\alpha\beta\chi} == 0$	$3\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon} + 3\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta}{}_{\delta} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\alpha\chi\delta} + 4\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\chi\alpha\delta} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\delta\alpha\chi} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\beta\alpha\delta} + 4\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\alpha\beta\chi} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\alpha\beta\chi} +$ $3\eta^{\beta\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\alpha}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\eta^{\alpha\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\beta\epsilon} + 3\eta^{\beta\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\alpha}{}_{\delta} == 3\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon} + 3\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha}{}_{\delta} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\beta\chi\delta} + 4\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\chi\beta\delta} +$ $2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\delta\beta\chi} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\alpha\beta\delta} + 2\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi} + 4\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta} + 3\eta^{\alpha\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\beta}\sigma^{\delta}{}_{\delta}{}^{\epsilon} + 3\eta^{\beta\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\alpha\epsilon} + 3\eta^{\alpha\chi}\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\beta}{}_{\delta}$	5
$2^+_.\tau^{\parallel\alpha\beta} == 0$	$4\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\delta} + 2\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi} + 3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta} + 3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha} + 2\eta^{\alpha\beta}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau(\Delta+\mathcal{K})^{\chi\delta} ==$ $3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi} + 3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta} + 3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi} + 3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha} + 2\eta^{\alpha\beta}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau(\Delta+\mathcal{K})^{\chi}{}_{\chi}$	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:		26

Massive spectrum

Massive particle

Pole residue:	$-\frac{1}{r_2} > 0$
Square mass:	$-\frac{t_2}{r_2} > 0$
Spin:	0
Parity:	Odd

Massless spectrum

(No particles)

Unitarity conditions

$r_2 < 0 \;\&\&\; t_2 > 0$