PSALTer results panel

$$\mathcal{S} == \int\int\int\int (\frac{1}{4} (-2\, a_{0}\, \mathcal{A}_{\alpha\chi\beta}\ \mathcal{A}^{\alpha\beta\chi} + 2\, a_{0}\, \mathcal{A}^{\alpha}{}_{\alpha}{}^{\beta}\ \mathcal{A}^{\chi}{}_{\beta\chi} + 4\ \mathcal{A}^{\alpha\beta\chi}\ \mathcal{W}_{\alpha\beta\chi} + 4\ \mathcal{T}^{\alpha\beta}\ h_{\alpha\beta} + 2\, a_{0}\, h^{\alpha\beta}\ \partial_{\beta}\mathcal{A}_{\alpha}{}^{\chi}{}_{\chi} - 2\, a_{0}\, h^{\alpha\beta}\ \partial_{\chi}\mathcal{A}_{\alpha}{}^{\chi}{}_{\beta} - a_{0}\, h^{\alpha}{}_{\alpha}\ \partial_{\chi}\mathcal{A}^{\beta}{}_{\beta}{}^{\chi} + a_{0}\, h^{\alpha}{}_{\alpha}\ \partial_{\chi}\mathcal{A}^{\beta\chi}{}_{\beta} + h_{2}\, \partial_{\beta}\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\ \partial^{\chi}\mathcal{A}^{\alpha}{}_{\alpha}{}^{\beta} - h_{2}\, \partial_{\chi}\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\ \partial^{\chi}\mathcal{A}^{\alpha}{}_{\alpha}{}^{\beta}))[t, x, y, z]\, dt\, dx\, dy\, dz$$

Wave operator

	$0^+_{.}h^{\perp}$	$0^+_{.}h^{\parallel}$	$0^+_{.}\mathcal{A}_s{}^{\perp t}$	$0^+_{.}\mathcal{A}_s{}^{\parallel}$	$0^+_{.}\mathcal{A}_s{}^{\perp h}$
$0^+_{.}h^{\perp}\dagger$	0	0	0	$\frac{i\, a_{0}\, k}{4}$	$\frac{i\, a_{0}\, k}{8\, \sqrt{2}}$
$0^+_{.}h^{\parallel}\dagger$	0	0	0	$-\frac{i\, a_{0}\, k}{4\, \sqrt{3}}$	$\frac{5\, i\, a_{0}\, k}{8\, \sqrt{6}}$
$0^+_{.}\mathcal{A}_s{}^{\perp t}\dagger$	0	0	0	$\frac{a_{0}}{2}$	$\frac{a_{0}}{4\, \sqrt{2}}$
$0^+_{.}\mathcal{A}_s{}^{\parallel}\dagger$	$-\frac{1}{4}\, i\, a_{0}\, k$	$\frac{i\, a_{0}\, k}{4\, \sqrt{3}}$	$\frac{a_{0}}{2}$	0	$\frac{a_{0}}{4\, \sqrt{2}}$
$0^+_{.}\mathcal{A}_s{}^{\perp h}\dagger$	$-\frac{i\, a_{0}\, k}{8\, \sqrt{2}}$	$-\frac{5\, i\, a_{0}\, k}{8\, \sqrt{6}}$	$\frac{a_{0}}{4\, \sqrt{2}}$	$\frac{a_{0}}{4\, \sqrt{2}}$	$-\frac{a_{0}}{4}$

	$1^+_{.}\mathcal{A}_s{}^{\perp}{}_{\alpha\beta}$	$1^-_{.}h^{\perp}{}_{\alpha}$	$1^-_{.}\mathcal{A}_s{}^{\perp t}{}_{\alpha}$	$1^-_{.}\mathcal{A}_s{}^{\parallel t}{}_{\alpha}$	$1^-_{.}\mathcal{A}_s{}^{\perp h}{}_{\alpha}$	$1^-_{.}\mathcal{A}_s{}^{\parallel h}{}_{\alpha}$
$1^+_{.}\mathcal{A}_s{}^{\perp}\dagger^{\alpha\beta}$	$\frac{a_{0}}{4}$	0	0	0	0	0
$1^-_{.}h^{\perp}\dagger^{\alpha}$	0	0	$-\frac{i\, a_{0}\, k}{4\, \sqrt{6}}$	$\frac{1}{4}\, i\, \sqrt{\frac{5}{6}}\, a_{0}\, k$	$\frac{i\, a_{0}\, k}{8\, \sqrt{3}}$	$-\frac{i\, a_{0}\, k}{4\, \sqrt{6}}$
$1^-_{.}\mathcal{A}_s{}^{\perp t}\dagger^{\alpha}$	0	$\frac{i\, a_{0}\, k}{4\, \sqrt{6}}$	$\frac{1}{12}\, (-4\, a_{0} - k^2\, h_{2})$	$\frac{1}{12}\, \sqrt{5}\, (2\, a_{0} - k^2\, h_{2})$	$\frac{a_{0} + k^2\, h_{2}}{12\, \sqrt{2}}$	$\frac{1}{12}\, (a_{0} + k^2\, h_{2})$
$1^-_{.}\mathcal{A}_s{}^{\parallel t}\dagger^{\alpha}$	0	$-\frac{1}{4}\, i\, \sqrt{\frac{5}{6}}\, a_{0}\, k$	$\frac{1}{12}\, \sqrt{5}\, (2\, a_{0} - k^2\, h_{2})$	$\frac{1}{12}\, (4\, a_{0} - 5\, k^2\, h_{2})$	$\frac{1}{12}\, \sqrt{\frac{5}{2}}\, (a_{0} + k^2\, h_{2})$	$\frac{1}{12}\, \sqrt{5}\, (a_{0} + k^2\, h_{2})$
$1^-_{.}\mathcal{A}_s{}^{\perp h}\dagger^{\alpha}$	0	$-\frac{i\, a_{0}\, k}{8\, \sqrt{3}}$	$\frac{a_{0} + k^2\, h_{2}}{12\, \sqrt{2}}$	$\frac{1}{12}\, \sqrt{\frac{5}{2}}\, (a_{0} + k^2\, h_{2})$	$\frac{1}{24}\, (2\, a_{0} - k^2\, h_{2})$	$-\frac{4\, a_{0} + k^2\, h_{2}}{12\, \sqrt{2}}$
$1^-_{.}\mathcal{A}_s{}^{\parallel h}\dagger^{\alpha}$	0	$\frac{i\, a_{0}\, k}{4\, \sqrt{6}}$	$\frac{1}{12}\, (a_{0} + k^2\, h_{2})$	$\frac{1}{12}\, \sqrt{5}\, (a_{0} + k^2\, h_{2})$	$-\frac{4\, a_{0} + k^2\, h_{2}}{12\, \sqrt{2}}$	$\frac{1}{12}\, (-a_{0} - k^2\, h_{2})$

	$2^+_{.}h^{\parallel}{}_{\alpha\beta}$	$2^+_{.}\mathcal{A}_s{}^{\parallel}{}_{\alpha\beta}$	$2^+_{.}\mathcal{A}_s{}^{\perp}{}_{\alpha\beta}$	$2^-_{.}\mathcal{A}_s{}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{.}h^{\parallel}\dagger^{\alpha\beta}$	0	$-\frac{i\, a_{0}\, k}{4\, \sqrt{3}}$	$-\frac{i\, a_{0}\, k}{2\, \sqrt{6}}$	0
$2^+_{.}\mathcal{A}_s{}^{\parallel}\dagger^{\alpha\beta}$	$\frac{i\, a_{0}\, k}{4\, \sqrt{3}}$	$-\frac{a_{0}}{2}$	0	0
$2^+_{.}\mathcal{A}_s{}^{\perp}\dagger^{\alpha\beta}$	$\frac{i\, a_{0}\, k}{2\, \sqrt{6}}$	0	$\frac{a_{0}}{4}$	0
$2^-_{.}\mathcal{A}_s{}^{\parallel}\dagger^{\alpha\beta\chi}$	0	0	0	$\frac{a_{0}}{4}$

	$3^-_{.}\mathcal{A}_s{}^{\parallel}{}_{\alpha\beta\chi}$
$3^-_{.}\mathcal{A}_s{}^{\parallel}\dagger^{\alpha\beta\chi}$	$-\frac{a_{0}}{2}$

Saturated propagator

	$0^+_{.}\mathcal{T}^{\perp}$	$0^+_{.}\mathcal{T}^{\parallel}$	$0^+_{.}\mathcal{W}_s{}^{\perp t}$	$0^+_{.}\mathcal{W}_s{}^{\parallel}$	$0^+_{.}\mathcal{W}_s{}^{\perp h}$
$0^+_{.}\mathcal{T}^{\perp}\dagger$	$-\frac{4\, k^2}{3\, a_{0}\, (4 + k^2)^2}$	0	$-\frac{8\, i\, k}{3\, a_{0}\, (4 + k^2)^2}$	$\frac{10\, i\, k}{12\, a_{0} + 3\, a_{0}\, k^2}$	$\frac{4\, i\, \sqrt{2}\, k}{12\, a_{0} + 3\, a_{0}\, k^2}$
$0^+_{.}\mathcal{T}^{\parallel}\dagger$	0	$\frac{4}{a_{0}\, k^2}$	0	$-\frac{2\, i}{\sqrt{3}\, a_{0}\, k}$	$\frac{4\, i\, \sqrt{\frac{2}{3}}}{a_{0}\, k}$
$0^+_{.}\mathcal{W}_s{}^{\perp t}\dagger$	$\frac{8\, i\, k}{3\, a_{0}\, (4 + k^2)^2}$	0	$-\frac{16}{3\, a_{0}\, (4 + k^2)^2}$	$\frac{20}{12\, a_{0} + 3\, a_{0}\, k^2}$	$\frac{8\, \sqrt{2}}{12\, a_{0} + 3\, a_{0}\, k^2}$
$0^+_{.}\mathcal{W}_s{}^{\parallel}\dagger$	$-\frac{10\, i\, k}{12\, a_{0} + 3\, a_{0}\, k^2}$	$\frac{2\, i}{\sqrt{3}\, a_{0}\, k}$	$\frac{20}{12\, a_{0} + 3\, a_{0}\, k^2}$	0	0
$0^+_{.}\mathcal{W}_s{}^{\perp h}\dagger$	$-\frac{4\, i\, \sqrt{2}\, k}{12\, a_{0} + 3\, a_{0}\, k^2}$	$-\frac{4\, i\, \sqrt{\frac{2}{3}}}{a_{0}\, k}$	$\frac{8\, \sqrt{2}}{12\, a_{0} + 3\, a_{0}\, k^2}$	0	0

	$1^+_{.}\mathcal{W}_s{}^{\perp}{}_{\alpha\beta}$	$1^-_{.}\mathcal{T}^{\perp}{}_{\alpha}$	$1^-_{.}\mathcal{W}_s{}^{\perp t}{}_{\alpha}$	$1^-_{.}\mathcal{W}_s{}^{\parallel t}{}_{\alpha}$	$1^-_{.}\mathcal{W}_s{}^{\perp h}{}_{\alpha}$	$1^-_{.}\mathcal{W}_s{}^{\parallel h}{}_{\alpha}$
$1^+_{.}\mathcal{W}_s{}^{\perp}\dagger^{\alpha\beta}$	$\frac{4}{a_{0}}$	0	0	0	0	0
$1^-_{.}\mathcal{T}^{\perp}\dagger^{\alpha}$	0	$\frac{6\, a_{0}\, k^2 + 8\, k^4\, h_{2}}{a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$-\frac{2\, i\, \sqrt{\frac{2}{3}}\, k\, (3\, a_{0}\, (1 + k^2) + 2\, k^4\, h_{2})}{a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{i\, \sqrt{\frac{10}{3}}\, k\, (3\, a_{0} + 2\, k^2\, h_{2})}{a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{2\, i\, k\, (3\, a_{0}\, (4 + k^2) + 2\, k^2\, (6 + k^2)\, h_{2})}{\sqrt{3}\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{4\, i\, \sqrt{\frac{2}{3}}\, k\, (-3\, a_{0} + k^2\, h_{2})}{a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$
$1^-_{.}\mathcal{W}_s{}^{\perp t}\dagger^{\alpha}$	0	$\frac{2\, i\, \sqrt{\frac{2}{3}}\, k\, (3\, a_{0}\, (1 + k^2) + 2\, k^4\, h_{2})}{a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$-\frac{4\, (a_{0}\, (13 + 10\, k^2 + k^4) + 4\, k^2\, (1 + k^2)\, h_{2})}{3\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{2\, \sqrt{5}\, (a_{0}\, (5 + k^2) + 2\, k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{2\, \sqrt{2}\, (a_{0}\, (4 + k^2 + k^4) - 2\, k^2\, (-2 + k^2)\, h_{2})}{3\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{8\, (a_{0} + 2\, a_{0}\, k^2 + k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$
$1^-_{.}\mathcal{W}_s{}^{\parallel t}\dagger^{\alpha}$	0	$-\frac{i\, \sqrt{\frac{10}{3}}\, k\, (3\, a_{0} + 2\, k^2\, h_{2})}{a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{2\, \sqrt{5}\, (a_{0}\, (5 + k^2) + 2\, k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{4}{3\, a_{0}} - \frac{5}{9\, a_{0} + 3\, k^2\, h_{2}}$	$\frac{\sqrt{10}\, (-a_{0}\, (-4 + k^2) + 4\, k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{4\, \sqrt{5}\, (a_{0} + k^2\, h_{2})}{3\, a_{0}\, (3\, a_{0} + k^2\, h_{2})}$
$1^-_{.}\mathcal{W}_s{}^{\perp h}\dagger^{\alpha}$	0	$-\frac{2\, i\, k\, (3\, a_{0}\, (4 + k^2) + 2\, k^2\, (6 + k^2)\, h_{2})}{\sqrt{3}\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{2\, \sqrt{2}\, (a_{0}\, (4 + k^2 + k^4) - 2\, k^2\, (-2 + k^2)\, h_{2})}{3\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{\sqrt{10}\, (-a_{0}\, (-4 + k^2) + 4\, k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{-2\, a_{0}\, (-32 - 8\, k^2 + k^4) + 16\, k^2\, (4 + k^2)\, h_{2}}{3\, a_{0}\, (2 + k^2)^2\, (3\, a_{0} + k^2\, h_{2})}$	$-\frac{8\, \sqrt{2}\, (a_{0}\, (5 + k^2) - k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$
$1^-_{.}\mathcal{W}_s{}^{\parallel h}\dagger^{\alpha}$	0	$\frac{4\, i\, \sqrt{\frac{2}{3}}\, k\, (3\, a_{0} - k^2\, h_{2})}{a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{8\, (a_{0} + 2\, a_{0}\, k^2 + k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{4\, \sqrt{5}\, (a_{0} + k^2\, h_{2})}{3\, a_{0}\, (3\, a_{0} + k^2\, h_{2})}$	$-\frac{8\, \sqrt{2}\, (a_{0}\, (5 + k^2) - k^2\, h_{2})}{3\, a_{0}\, (2 + k^2)\, (3\, a_{0} + k^2\, h_{2})}$	$\frac{4}{3}\, (\frac{5}{a_{0}} - \frac{16}{3\, a_{0} + k^2\, h_{2}})$

	$2^+_{.}\mathcal{T}^{\parallel}{}_{\alpha\beta}$	$2^+_{.}\mathcal{W}_s{}^{\parallel}{}_{\alpha\beta}$	$2^+_{.}\mathcal{W}_s{}^{\perp}{}_{\alpha\beta}$	$2^-_{.}\mathcal{W}_s{}^{\parallel}{}_{\alpha\beta\chi}$
$2^+_{.}\mathcal{T}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{8}{a_{0}\, k^2}$	$\frac{4\, i}{\sqrt{3}\, a_{0}\, k}$	$-\frac{8\, i\, \sqrt{\frac{2}{3}}}{a_{0}\, k}$	0
$2^+_{.}\mathcal{W}_s{}^{\parallel}\dagger^{\alpha\beta}$	$-\frac{4\, i}{\sqrt{3}\, a_{0}\, k}$	$-\frac{8}{3\, a_{0}}$	$\frac{4\, \sqrt{2}}{3\, a_{0}}$	0
$2^+_{.}\mathcal{W}_s{}^{\perp}\dagger^{\alpha\beta}$	$\frac{8\, i\, \sqrt{\frac{2}{3}}}{a_{0}\, k}$	$\frac{4\, \sqrt{2}}{3\, a_{0}}$	$-\frac{4}{3\, a_{0}}$	0
$2^-_{.}\mathcal{W}_s{}^{\parallel}\dagger^{\alpha\beta\chi}$	0	0	0	$\frac{4}{a_{0}}$

	$3^-_{.}\mathcal{W}_s{}^{\parallel}{}_{\alpha\beta\chi}$
$3^-_{.}\mathcal{W}_s{}^{\parallel}\dagger^{\alpha\beta\chi}$	$-\frac{2}{a_{0}}$

Source constraints

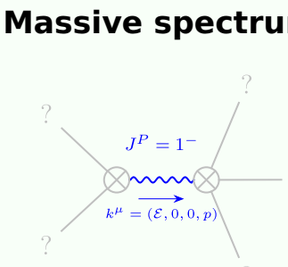
Spin-parity form	Covariant form	Multiplicities
$k\ 0^+_{.}\mathcal{W}_s{}^{\perp t} + 2\, i\ 0^+_{.}\mathcal{T}^{\perp} == 0$	$2\, \partial_{\beta}\partial_{\alpha}\mathcal{T}^{\alpha\beta} == \partial_{\chi}\partial_{\beta}\partial_{\alpha}\mathcal{W}^{\alpha\beta\chi}$	1
$2\, k\ 1^-_{.}\mathcal{W}_s{}^{\perp h\, \alpha} + k\ 1^-_{.}\mathcal{W}_s{}^{\perp t\, \alpha} + 6\, i\ 1^-_{.}\mathcal{T}^{\perp\, \alpha} == 0$	$2\, \partial_{\chi}\partial_{\beta}\partial^{\alpha}\mathcal{T}^{\beta\chi} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\mathcal{W}^{\beta\alpha\chi} == 2\, \partial_{\chi}\partial^{\chi}\partial_{\beta}\mathcal{T}^{\alpha\beta} + \partial_{\delta}\partial_{\chi}\partial_{\beta}\partial^{\alpha}\mathcal{W}^{\beta\chi\delta}$	3
Total expected gauge generators:		4

Massive spectrum

Massive particle

Pole residue:	$\frac{75\, a_{0} - 68\, h_{2}}{3\, a_{0}\, h_{2} - 2\, h_{2}^2} > 0$
Square mass:	$-\frac{3\, a_{0}}{h_{2}} > 0$
Spin:	1
Parity:	Odd

Massless spectrum



Massless particle

Pole residue:	$-\frac{p^2}{a_{0}} > 0$
Polarisations:	2

Unitarity conditions

$a_{0} < 0\ \&\&\ h_{2} > 0$