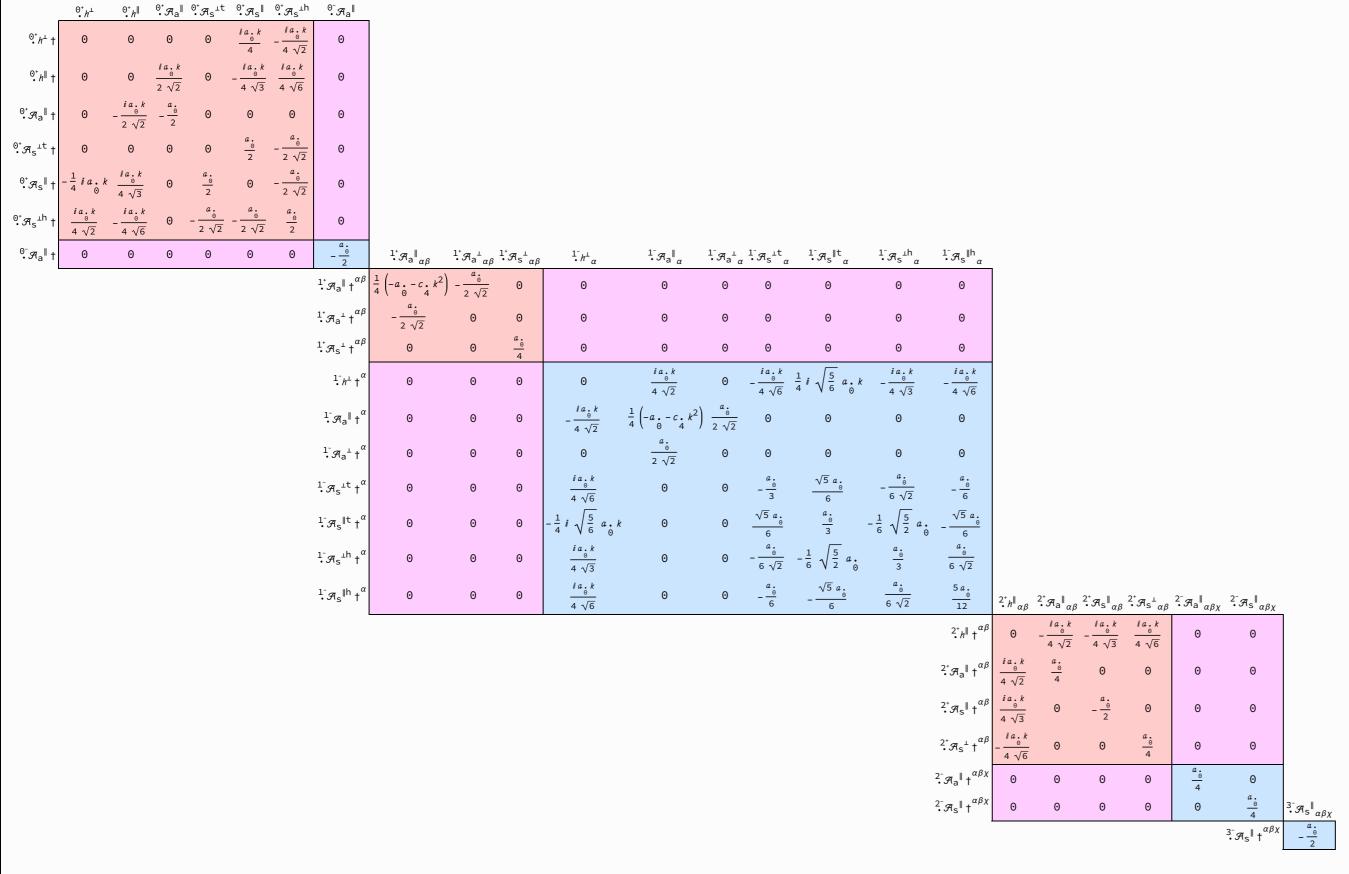
PSALTer results panel

 $S = \iiint \left(\frac{1}{16} \left(8 \stackrel{a}{a} \stackrel{\mathcal{A}}{\alpha} \stackrel{\mathcal{A}}{\beta} \stackrel{\chi}{\alpha} - 8 \stackrel{\mathcal{A}}{\beta} \stackrel{\alpha\beta}{\alpha} \stackrel{\alpha\beta}{\alpha} - 2 \stackrel{\alpha\beta}{\alpha} \stackrel{\alpha\beta}{\alpha} - 4 \stackrel{a}{a} \stackrel{h}{\alpha} \stackrel{h}{\beta} \stackrel{A}{\alpha} \stackrel{\beta}{\beta} - 4 \stackrel{a}{a} \stackrel{h}{\alpha} \stackrel{h}{\alpha} \stackrel{h}{\beta} \stackrel{A}{\alpha} \stackrel{\beta}{\beta} - 4 \stackrel{a}{a} \stackrel{h}{\alpha} \stackrel{h}{\beta} \stackrel{\beta\beta}{\alpha} \stackrel{\beta\beta}{\alpha} \stackrel{\beta\beta}{\alpha} - 4 \stackrel{a}{a} \stackrel{h}{\alpha} \stackrel{h}{\beta} \stackrel{\beta\beta}{\alpha} \stackrel{\beta$ $c. \partial_{\mathcal{A}}\mathcal{A}^{\alpha\beta\chi} \partial_{\delta}\mathcal{A}_{\alpha\beta}^{} \partial_{\delta}\mathcal{A}_{\alpha\beta}^{} \partial_{\delta}\mathcal{A}_{\alpha\chi}^{} - c. \partial_{\beta}\mathcal{A}^{\alpha\beta\chi} \partial_{\delta}\mathcal{A}_{\alpha\chi}^{} + 2c. \partial_{\lambda}\mathcal{A}_{\beta\alpha}^{} \partial_{\delta}\mathcal{A}_{\beta\alpha}^{} - 2c. \partial_{\lambda}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\chi\alpha}^{} - 2c. \partial_{\lambda}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\alpha\alpha}^{} \partial_{\delta}\mathcal{A}_{\alpha\alpha}^{\phantom{\alpha\gamma\chi$

<u>Wave</u> <u>operator</u>



<u>Saturated</u> propagator

	${}^{\scriptscriptstyle{0}}\mathcal{T}^{\scriptscriptstyle{1}}$	⁰ . T	".Wa"	· W _s -c	".W _S "	*.W _S ***	".Wa"														
${\stackrel{0^+}{\cdot}}\mathcal{T}^\perp$ †	$-\frac{36 k^2}{a_{0} \left(16+3 k^2\right)^2}$	$\frac{4 \sqrt{3}}{16 a \cdot 3 a \cdot k^2}$	$\frac{2 i \sqrt{6} k}{16 a + 3 a k^2}$	$-\frac{72 i k}{a \cdot \left(16+3 k^2\right)^2}$	$\frac{8 i k (19+3 k^2)}{a_0 (16+3 k^2)^2}$	$-\frac{4 i \sqrt{2} k (10+3 k^2)}{a_{\theta} (16+3 k^2)^2}$	Θ														
^{0⁺} ∵″†	$\frac{4\sqrt{3}}{16a + 3a \cdot k^2}$	$\frac{4}{a \cdot k^2}$	$\frac{2 i \sqrt{2}}{a \cdot k}$	$\frac{8 i \sqrt{3}}{16 a. k+3 a. k^3}$	$-\frac{8 i}{\sqrt{3} \left(16 a_{0} k+3 a_{0} k^{3}\right)}$	$-\frac{8 i \sqrt{\frac{2}{3}}}{16 a. k+3 a. k^{3}}$	Θ														
^{0⁺} Wa [∥] †	$-\frac{2 i \sqrt{6} k}{16 a + 3 a k^2}$	$-\frac{2 i \sqrt{2}}{a \cdot k}$	0	$\frac{4 \sqrt{6}}{16 a + 3 a k^2}$	$-\frac{4\sqrt{\frac{2}{3}}}{16a.+3a.k^2}$	$-\frac{8}{\sqrt{3}\left(16a_{\stackrel{.}{0}}+3a_{\stackrel{.}{0}}k^2\right)}$	0														
^{0⁺} Ws ^{⊥t} †	$\frac{72 i k}{a_{\circ} \left(16+3 k^2\right)^2}$	$-\frac{8 i \sqrt{3}}{16 a. k+3 a. k^3}$	$\frac{4 \sqrt{6}}{16 a +3 a k^2}$	$-\frac{144}{a_{\cdot 0} \left(16+3 k^2\right)^2}$	$\frac{16(19+3 k^2)}{a_{0}(16+3 k^2)^{2}}$	$-\frac{8\sqrt{2}(10+3k^2)}{a_{0}(16+3k^2)^2}$	0														
⁰⁺ w _s ∥†	$-\frac{8 i k (19+3 k^2)}{}$	8 i	$-\frac{4\sqrt{\frac{2}{3}}}{\sqrt{\frac{2}{3}}}$	$\frac{16(19+3 k^2)}{a_0(16+3 k^2)^2}$	$-\frac{16(35+6 k^2)}{3 a_0(16+3 k^2)^2}$	$-\frac{8\sqrt{2}(22+3k^2)}{3a_{\theta}(16+3k^2)^2}$	0														
	$6 \sqrt{2} k (10+3 k^2)$	$\sqrt{3} \left(16 a_{\circ} k + 3 a_{\circ} k^{3} \right)$ $\frac{8 i \sqrt{\frac{2}{3}}}{16 a_{\circ} k + 3 a_{\circ} k^{3}}$	16 a . +3 a . k ² - 8	$8 \sqrt{2} (10+3 k^2)$	$-\frac{8\sqrt{2}(22+3k^2)}{3a_{\theta}(16+3k^2)^2}$																
• " 5	$a_{0} (16+3 k^{2})^{2}$		$\sqrt{3} \left(16 a + 3 a k^2\right)$			$\frac{32 (13+3 k^2)}{3 a_{\theta} (16+3 k^2)^2}$	0 _ <u>2</u>														
º⁻Wa †	0	0	0	0	0	0	$\frac{-\frac{1}{a}}{a}$ $1^{+}W_{a}^{\parallel} + \alpha^{\beta}$	¹˙Wa αβ	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0 υ _s ω _β	1. τ ¹ α	1- _{Wa} _α 0	1-W _a -α	1-W _S ^{1t} _α	1-W _s t _α	1-Ws ^{1h} α	1-W _S h _α 0				
								$-\frac{2\sqrt{2}}{a_{\cdot \theta}}$	a. 0	0	0					0	0				
							$1^{+}W_{s}^{\perp} \uparrow^{\alpha\beta}$	а. 0	a.² ⊙	4	9	0	0	0	0	0	9				
							$\frac{1}{2}\mathcal{T}^{\perp}\uparrow^{\alpha}$	0		a. 0	$2 k^2 \left(a + c \cdot k^2\right)$	$\frac{2 i \sqrt{2} k}{2 a + a k^2}$	$i k (4+k^2) \left(a_0 + c_1 k^2\right)$	$i\left(2c_{4}k^{5}+a_{6}k\left(6+5k^{2}\right)\right)$	$i\sqrt{\frac{5}{6}} k$	i $k \left(c_{4} k^{4} - 2 a_{0} (3 + k^{2}) \right)$	$i\sqrt{\frac{2}{3}}k$				
								U	0	Θ	$a_{\theta}^{2}(2+k^{2})^{2}$		$a_{0}^{2}(2+k^{2})^{2}$	$-\frac{1}{\sqrt{6}} a_0^2 (2+k^2)^2$	$2 a + a \cdot k^2$	$\frac{\sqrt{3} \ a_0^2 (2+k^2)^2}{\sqrt{\frac{2}{3} \ k^2}}$	$2 a + a \cdot k^2$				
							¹-̂ Wa † ^α	0	Θ	0	$-\frac{2i\sqrt{2}k}{2a\cdot +a\cdot k^2}$	0	$\frac{\sqrt{2} (4+k^2)}{a_{\theta} (2+k^2)}$	$-\frac{2 k^2}{\sqrt{3} \left(2 a_0 + a_0 k^2\right)}$	0	$2 a_{0} + a_{0} k^{2}$	0				
							¹⁻Wa¹†α	0	Θ	0	$-\frac{i k (4+k^2) (a_0 + c_1 k^2)}{a_0^2 (2+k^2)^2}$	$\frac{\sqrt{2} \left(4+k^2\right)}{a \cdot \left(2+k^2\right)}$	$\frac{(4+k^2)^2 \left(a_0 + c_4 k^2\right)}{2 a_0^2 (2+k^2)^2}$	$\frac{k^2 \left(a_{\frac{1}{6}} \left(-2+k^2\right)-2 c_{\frac{1}{4}} k^2 \left(4+k^2\right)\right)}{2 \sqrt{6} a_{\frac{1}{6}}^2 \left(2+k^2\right)^2}$	$-\frac{\sqrt{\frac{5}{6}} k^2}{4 a_{\theta} + 2 a_{\theta} k^2}$	$\frac{10 a_0 k^2 + 4 \left(a_0 + c_1\right) k^4 + c_1 k^6}{2 \sqrt{3} a_0^2 (2 + k^2)^2}$	$-\frac{k^2}{\sqrt{6}\left(2a_{0}+a_{0}k^2\right)}$				
							1-W _S ^{1t} †α	0	Θ	Θ	$\frac{i\left(2c_{4}k^{5}+a_{6}k(6+5k^{2})\right)}{\sqrt{6}a_{6}^{2}(2+k^{2})^{2}}$	$-\frac{2 k^2}{\sqrt{3} \left(2 a + a k^2\right)}$	$\frac{k^2 \left(a \cdot (-2+k^2) - 2c_{\frac{1}{4}} k^2 (4+k^2)\right)}{2 \sqrt{6} a \cdot \frac{2}{6} (2+k^2)^2}$	$\frac{4 c_{\cdot k}^{\cdot k^{6}-a_{\cdot 0}} \left(76+52 k^{2}+3 k^{4}\right)}{12 a_{\cdot 0}^{2} \left(2+k^{2}\right)^{2}}$	$\frac{\sqrt{5} \left(10+3 k^2\right)}{12 a \cdot \left(2+k^2\right)}$	$\frac{-c_{\frac{1}{4}}k^{6}+a_{\frac{1}{6}}(-2+k^{2})}{3\sqrt{2}a_{\frac{1}{6}}^{2}(2+k^{2})^{2}}$	$ \begin{array}{c} 1 \\ -2 a \cdot -\frac{8 a \cdot 6}{6} \\ -2 \cdot 3 k^2 \end{array} $				
							1-w _s t †	0	0	Θ	$-\frac{i\sqrt{\frac{5}{6}}k}{}$	Θ	$-\frac{\sqrt{\frac{5}{6}} k^2}{4 a_0 + 2 a_0 k^2}$	$\frac{\sqrt{5} (10+3 k^2)}{12 a_{0} (2+k^2)}$	$\frac{1}{12 a}$	$-\frac{\sqrt{\frac{5}{2}}}{6 a \cdot +3 a \cdot k^2}$	$-\frac{\sqrt{5}}{6 a}$				
							1 $W_{s}^{\perp h}$ $^{\alpha}$	0	Θ	0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\sqrt{\frac{2}{3}} k^2$	10 $a_0 k^2 + 4 \left(a_0 + c_4\right) k^4 + c_4 k^6$	$\frac{-c_{\frac{1}{6}}k^{6}+a_{\frac{1}{6}}(-2+k^{2})}{3\sqrt{2}a_{\frac{1}{6}}^{2}(2+k^{2})^{2}}$	$\sqrt{\frac{5}{2}}$	$c_{4}k^{6}+4a_{0}\left(17+14k^{2}+3k^{4}\right)$	$-\frac{\sqrt{2}(7+3k^2)}{}$				
								_			$\sqrt{3} \ a_0^2 (2+k^2)^2$ i $\sqrt{\frac{2}{3}} \ k$	$2 a + a \cdot k^2$	$2 \sqrt{3} a_{\theta}^{2} (2+k^{2})^{2}$ k^{2}		$6 a_0 + 3 a_0 k^2$ $\sqrt{5}$	$6 a_0^2 (2+k^2)^2$ $\sqrt{2} (7+3 k^2)$	$3 a_{\theta} (2+k^2)$				
							$\mathcal{W}_{s}^{\parallel h} \uparrow^{\alpha}$	0	0	0	$-\frac{i\sqrt{\frac{2}{3}}k}{2a_0+a_0k^2}$	0	$-\frac{k^2}{\sqrt{6}\left(2a_{\stackrel{.}{0}}+a_{\stackrel{.}{0}}k^2\right)}$	$\frac{1}{-2 a_{\cdot 0}^{-\frac{8 a_{\cdot 0}}{0}}}$	$-\frac{\sqrt{5}}{6 a}_{\theta}$	$-\frac{\sqrt{2} (7+3 k^2)}{3 a_{\odot} (2+k^2)}$	5 3 a.	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		$W_{a}^{\parallel}{}_{\alpha\beta\chi} \stackrel{2^{-}}{\cdot} W_{s}^{\parallel}{}_{\alpha}$	βχ
																	$^{2^{+}}\mathcal{T}^{\parallel}$ † $^{\alpha\beta}$	$-\frac{8}{a_{\cdot k}k^2} - \frac{4 i \sqrt{2}}{a_{\cdot k}k} \frac{4 i}{\sqrt{3} a_{\cdot 0}}$	$\frac{1}{k} \frac{4i \sqrt{\frac{2}{3}}}{a_0 k}$	0 0	
																	$^{2^{+}}W_{a}^{\parallel}$ † $^{\alpha\beta}$	$\frac{4 i \sqrt{2}}{a \cdot k} \qquad 0 \qquad \frac{2 \sqrt{\frac{2}{3}}}{a \cdot 0}$	$\frac{4}{\sqrt{3}} a_{\hat{\theta}}$	0 0	
																	$^{2^+}W_{\mathrm{S}}^{\parallel}\dagger^{lphaeta}$	$-\frac{4i}{\sqrt{3}} \underbrace{a.k}_{\theta} \frac{2\sqrt{\frac{2}{3}}}{a.\theta} - \frac{8}{3a.\theta}$	$-\frac{2\sqrt{2}}{3a_{\bullet}}$	0 0	
																	$^{2^{+}}W_{s}^{\perp}\dagger^{lphaeta}$	$-\frac{4 i \sqrt{\frac{2}{3}}}{a_{0} k} \frac{4}{\sqrt{3} a_{0}} -\frac{2 \sqrt{2}}{3 a_{0}}$		0 0	
																	$^{2^{-}}W_{a}^{\parallel}$ † $^{\alpha\beta\chi}$	0 0 0	0	$\frac{4}{a}$ 0	
																	2 W_{s}^{\parallel} $\dagger^{\alpha\beta\chi}$	0 0 0	0	$0 \qquad \frac{4}{a_{\bullet}}$	3-W _s αβχ
4																					

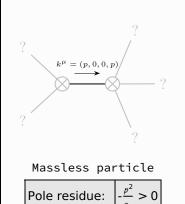
<u>Source</u> <u>constraints</u>

Spin-parity form	Covariant form	Multiplicities
$k \stackrel{0^+}{\cdot} \mathcal{W}_S^{\parallel} + 2 k \stackrel{0^+}{\cdot} \mathcal{W}_S^{\perp h} - 6 i \stackrel{0^+}{\cdot} \mathcal{T}^{\perp} == 0$	$2 \partial_{\beta} \partial_{\alpha} \mathcal{T}^{\alpha\beta} + \partial_{\chi} \partial^{\chi} \partial_{\alpha} \mathcal{W}^{\alpha\beta}_{ \beta} = \partial_{\chi} \partial_{\beta} \partial_{\alpha} \mathcal{W}^{\alpha\beta\chi}$	1
$k \stackrel{0^+}{\cdot} W_S^{\perp t} + 2 i \stackrel{0^+}{\cdot} \mathcal{T}^{\perp} == 0$	$2 \partial_{\beta} \partial_{\alpha} \mathcal{T}^{\alpha\beta} = \partial_{\chi} \partial_{\beta} \partial_{\alpha} w^{\alpha\beta\chi}$	1
$6 \ k \ {}^{1} \cdot w_a{}^{\perp \alpha} + 2 \ k \ {}^{1} \cdot w_s{}^{\parallel h^{\alpha}} + k \ {}^{1} \cdot w_s{}^{\parallel t^{\alpha}} + 3 \ k \ {}^{1} \cdot w_s{}^{\perp t^{\alpha}} + 12 \ i \ {}^{1} \cdot \mathcal{T}^{\perp \alpha} = 0$	$ \begin{vmatrix} 4 \partial_{\chi} \partial_{\beta} \partial^{\alpha} \mathcal{T}^{\beta \chi} + 2 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial_{\beta} w^{\beta \alpha \chi} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} w^{\alpha \beta}_{ \beta} = 4 \partial_{\chi} \partial^{\chi} \partial_{\beta} \mathcal{T}^{\alpha \beta} + 2 \partial_{\delta} \partial_{\chi} \partial_{\beta} \partial^{\alpha} w^{\beta \chi \delta} + \partial_{\delta} \partial^{\delta} \partial_{\beta} \partial^{\alpha} w^{\beta \chi}_{ \chi} $	3
$k \cdot i^{-} W_{s}^{\perp h^{\alpha}} - 6 i \cdot i^{-} \mathcal{T}^{\perp \alpha} == k \left(3 \cdot i^{-} W_{a}^{\perp \alpha} + i^{-} W_{s}^{\perp t^{\alpha}} \right)$	$2\partial_{\chi}\partial_{\beta}\partial^{\alpha}\mathcal{T}^{\beta\chi} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\mathcal{W}^{\beta\alpha\chi} = 2\partial_{\chi}\partial^{\chi}\partial_{\beta}\mathcal{T}^{\alpha\beta} + \partial_{\delta}\partial_{\chi}\partial_{\beta}\partial^{\alpha}\mathcal{W}^{\beta\chi\delta}$	3
Total expected gauge generators:		8

<u>Massive</u> <u>spectrum</u>

(There are no massive particles)

<u>Massless</u> <u>spectrum</u>



Polarisations: 2

<u>Gauge</u> <u>symmetries</u>

(Not yet implemented in PSALTer)

<u>Unitarity</u> <u>conditions</u>

 $a_{\stackrel{\bullet}{0}} < 0$

<u>Validity</u> <u>assumptions</u>

(Not yet implemented in PSALTer)