

PSALTer results panel

Wave operator and propagator

$$\begin{aligned} \mathcal{A}_S \parallel + a\beta x &= \mathcal{A}_S \parallel a\beta x \\ -3(a, +4a, -4a, i) &= \begin{matrix} 0 & 6 & 7 \end{matrix} \\ \mathcal{W}_S \parallel + a\beta x &= \mathcal{W}_S \parallel a\beta x \\ \frac{1}{-3(a, +4a, i) + 12a,} &= \begin{matrix} 0 & 6 & 7 \end{matrix} \end{aligned}$$

[illegible]

$2^+ \cdot \mathcal{H}^+ + \alpha\beta$	$2^+ \cdot \mathcal{H}^+ \alpha\beta$	$2^+ \cdot \mathcal{H}^+ \alpha\beta$	$2^+ \cdot \mathcal{H}^+ \alpha\beta$	$2^+ \cdot \mathcal{H}^+ \alpha\beta$	$2^+ \cdot \mathcal{H}^+ \alpha\beta\chi$
$2^+ \cdot \mathcal{H}^+ + \alpha\beta$	$\frac{a, b^2}{- \frac{0}{8}}$	0	0	0	0
$2^+ \cdot \mathcal{H}^+ + \alpha\beta$	0	$\frac{1}{4} (a, -2 a, -a,)$	$-\frac{1}{4} \sqrt{3} (2 a, + a, + a,)$	0	0
$2^+ \cdot \mathcal{H}^+ + \alpha\beta$	0	0	0	0	0
$2^+ \cdot \mathcal{H}^+ + \alpha\beta$	$-\frac{1}{4} \sqrt{3} (2 a, + a, + a,)$	$\frac{2}{4} (a, -4 a, -2 a, -3 a, +16 a, -4 a, -2 a,)$	$\frac{1}{4} (a, -4 a, -2 a, -3 a, +16 a, -4 a, -2 a,)$	0	0
$2^+ \cdot \mathcal{H}^+ + \alpha\beta\chi$	0	0	0	$\frac{1}{4} (a, -2 a, -a,)$	$-\frac{1}{4} \sqrt{3} (2 a, + a, + a,)$
$2^+ \cdot \mathcal{H}^+ + \alpha\beta\chi$	0	0	0	$-\frac{1}{4} \sqrt{3} (2 a, + a, + a,)$	$\frac{3}{4} (a, -4 a, -2 a, -3 a, +16 a, -4 a, -2 a,)$

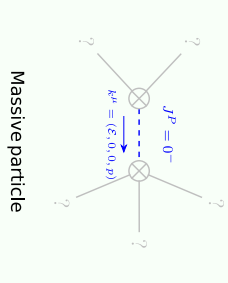
$0^+ \mathcal{H}^+ +$	0	0	0	$0^+ \mathcal{H}^+_{\text{st}}$	0	$0^+ \mathcal{H}^+_{\text{st}}$	0	$0^+ \mathcal{H}^+_{\text{st}}$	0
$0^+ \mathcal{H}^+ +$	$\frac{a_1 k^2}{4}$	0	0			0	0		0
$0^+ \mathcal{H}^+_{\text{st}} +$	0	$\frac{1}{4}(-2a_1 - 2a_2 - a_3 - 3a_4)$	0	0	0	$\frac{3}{2}(a_1 + 4a_2 - 4a_3 - 4a_4)$	0	0	0
$0^+ \mathcal{H}^+_{\text{st}} +$	0	0	0	$\frac{3}{2}(a_1 + 4a_2 - 4a_3 - 4a_4)$	0	0	0	0	0
$0^+ \mathcal{H}^+_{\text{st}} +$	0	0	0	$\frac{3}{2}(a_1 + 4a_2 - 4a_3 - 4a_4)$	0	0	0	0	0
$0^+ \mathcal{H}^+_{\text{st}} +$	0	0	0	0	0	0	0	0	0
$0^+ \mathcal{H}^+_{\text{st}} +$	0	0	0	0	0	0	0	$-\frac{a_1}{2} - 2a_2 - 2a_3 - 6a_4$	k^2

Spin-parity	form	Covariant form	Multiplicities
$0^+ \mathcal{W}_s^{hh} = 0$	2	$\partial_\alpha \mathcal{W}^{\alpha\beta}_\beta = \partial_\beta \mathcal{W}^{\alpha\beta}_\alpha + \partial_\beta \mathcal{W}^{\alpha\beta}_\alpha$	1
$0^+ \mathcal{W}_s^{ll} + 3 \cdot 0^+ \mathcal{W}_s^{lt} = 0$		$\partial_\alpha \mathcal{W}^{\alpha\beta}_\beta + \partial_\beta \mathcal{W}^{\alpha\beta}_\alpha + \partial_\beta \mathcal{W}^{\alpha\beta}_\alpha = 0$	1
$0^+ \mathcal{T}^\perp = 0$		$\partial_\beta \partial_\alpha \mathcal{T}^{\alpha\beta} = 0$	1
$1^- \mathcal{W}_s^{lh\alpha} + 1^- \mathcal{W}_s^{lh\alpha} = 0$	2	$\partial_\beta \partial^\alpha \mathcal{W}^{\beta\chi}_\chi + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\alpha}_\beta + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\alpha}_\beta =$ $\partial_\chi \partial^\alpha \mathcal{W}^{\beta\chi}_\beta + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\chi}_\beta + 2 \partial_\chi \partial^\alpha \mathcal{W}^{\alpha\beta}_\beta$	3
$1^- \mathcal{W}_s^{lt\alpha} + 1^- \mathcal{W}_s^{lt\alpha} = 0$		$\partial_\beta \partial^\alpha \mathcal{W}^{\beta\chi}_\chi + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\chi}_\beta + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\chi}_\beta =$ $\partial_\chi \partial^\alpha \mathcal{W}^{\alpha\beta}_\beta + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\alpha}_\beta + \partial_\chi \partial^\alpha \mathcal{W}^{\beta\alpha}_\beta$	3
$1^- \mathcal{T}^\perp = 0$		$\partial_\chi \partial_\beta \partial^\alpha \mathcal{T}^{\beta\chi} = \partial_\chi \partial_\beta \mathcal{T}^{\alpha\beta}$	3
Total expected gauge generators:			12

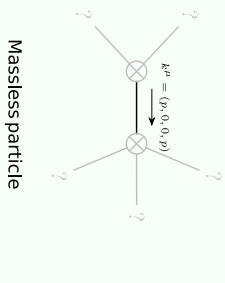
	$0^+\mathcal{T}^\perp$	$0^+\mathcal{T}^\parallel$	$0^+\mathcal{W}_a^\parallel$	$0^+\mathcal{W}_s^{\perp t}$	$0^+\mathcal{W}_s^\parallel$	$0^+\mathcal{W}_s^{\perp h}$	$0^+\mathcal{W}_a^\parallel$
$0^+\mathcal{T}^\perp \uparrow$	0	0	0	0	0	0	0
$0^+\mathcal{T}^\parallel \uparrow$	0	$\frac{4}{a, k^2_0}$	0	0	0	0	0
$0^+\mathcal{W}_a^\parallel \uparrow$	0	0	$-\frac{4}{2a_0+2a_1+a_2+3a_3}$	0	0	0	0
$0^+\mathcal{W}_s^{\perp t} \uparrow$	0	0	0	$\frac{1}{-6(a_0+4a_6)+24a_7}$	$\frac{1}{6(a_0+4a_6-4a_7)}$	0	0
$0^+\mathcal{W}_s^\parallel \uparrow$	0	0	0	$\frac{1}{6a_0+24a_6-24a_7}$	$\frac{1}{-6(a_0+4a_6)+24a_7}$	0	0
$0^+\mathcal{W}_s^{\perp h} \uparrow$	0	0	0	0	0	0	0
$0^+\mathcal{W}_a^\parallel \uparrow$	0	0	0	0	0	0	$-\frac{2}{a_0+4(a_1a_2+3c_1k^2)}$

Massive and massless spectra

Pole residue:	$\frac{1}{6c_1} > 0$
Square mass:	$-\frac{a^2+4a^2-4a^2}{12c_1} > 0$
Spin:	0
Parity:	Odd



Pole residue:	$-\frac{1}{a_0} > 0$
Polarisations:	2



Unitarity conditions

$$a_1 \in \mathbb{R} \ \&\& \ a_0 < 0 \ \&\& \ a_2 > \frac{1}{4}(a_0 + 4a_1) \ \&\& \ c_1 > 0$$