PSALTer results panel

Wave operator and propagator

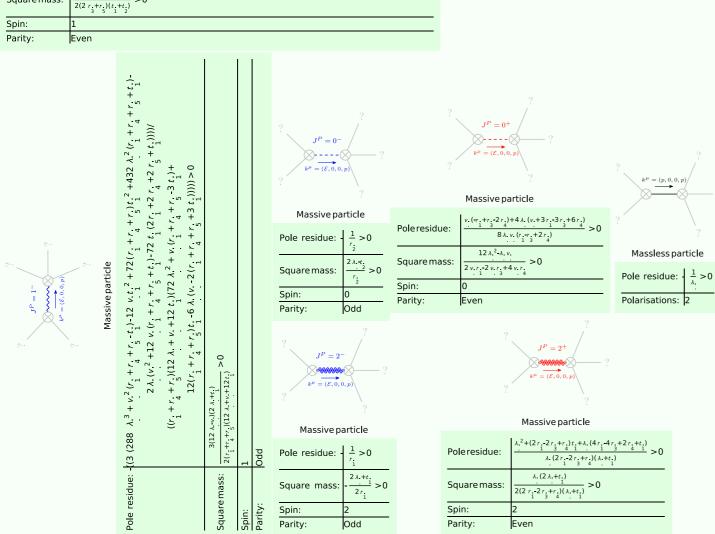|	$0^+ \mathcal{J}$	$0^+ \rho$	$0^+ \sigma^\parallel$	$0^+ \tau^\parallel$		$0^+ \tau^\perp$	$0^+ \sigma^\parallel$
$0^+ \mathcal{J} \dagger$	0	0	0	0	0		0
$0^+ \rho \dagger$	0	$\frac{3(-12\lambda_\cdot + v_\cdot + 24 k^2 (r_\cdot \cdot_3 \cdot r_\cdot + 2 r_4))}{32 k^2 (-12\lambda^2 + \lambda_\cdot v_\cdot + 2 k^2 v_\cdot (r_\cdot \cdot_3 \cdot r_\cdot + 2 r_4))}$	$\frac{1}{-4 i \sqrt{\frac{2}{3}} k \lambda + \frac{8 i \sqrt{\frac{2}{3}} k^3 v_\cdot (r_\cdot \cdot_3 + 2 r_\cdot_4)}{12 \lambda - v_\cdot}}$	$\frac{\sqrt{3}(-12\lambda_\cdot + v_\cdot + 24 k^2 (r_\cdot_3 + 2 r_4))}{32 k^2 (-12\lambda^2 + \lambda_\cdot v_\cdot + 2 k^2 v_\cdot (r_\cdot_3 \cdot_3 + 2 r_4))}$	0		0
$0^+ \sigma^\parallel \dagger$	0	$\frac{i \sqrt{\frac{3}{2}}}{4(-k\lambda + \frac{2 k^3 v_\cdot (r_\cdot_3 \cdot + 2 r_4)}{12 \lambda - v_\cdot})}$	$\frac{v_\cdot}{-12\lambda^2 + \lambda_\cdot v_\cdot + 2 k^2 v_\cdot (r_\cdot_3 \cdot + 2 r_4)}$	$\frac{i}{8\sqrt{2}(\frac{k\lambda}{2} + \frac{k^3 v_\cdot (r_\cdot_3 + 2 r_4)}{-12\lambda + v_\cdot})}$	0		0
$0^+ \tau^\parallel \dagger$	0	$\frac{\sqrt{3}(-12\lambda_\cdot + v_\cdot + 24 k^2 (r_\cdot_3 + 2 r_4))}{32 k^2 (12\lambda^2 - v_\cdot (\lambda_\cdot + 2 k^2 (r_\cdot_3 + 2 r_4)))}$	$\frac{i}{8\sqrt{2}(\frac{k\lambda}{2} + \frac{k^3 v_\cdot (r_\cdot_3 + 2 r_4)}{-12\lambda + v_\cdot})}$	$\frac{-12\lambda_\cdot + v_\cdot + 24 k^2 (r_\cdot_3 + 2 r_4)}{32 k^2 (-12\lambda^2 + \lambda_\cdot v_\cdot + 2 k^2 v_\cdot (r_\cdot_3 + 2 r_4))}$	0		0
$0^+ \tau^\perp \dagger$	0	0	0	0	0		0
$0^+ \sigma^\parallel \dagger$	0	0	0	0		0	$\frac{1}{-2\lambda_\cdot + k^2 r_\cdot_2 + t_2}$

$$S == \iiiint (-\tfrac{1}{18}(18\phi\,\rho + 18\,\sigma^{a0x}\,\mathcal{A}_{a0x} + 36\lambda\,\mathcal{A}_{ab\,\rho}\,\mathcal{A}_{ab\,\beta}\,\mathcal{A}^{a0x}\ldots)) (t,x,y,z)\,d\,x\,d\,y\,d\,x\,d\,t$$

Massive and massless spectra

$J^P = 1^+$ — Massive particle

Pole residue:	$\frac{3(r_5 t_1^2 \ldots)}{(2 r_3 + r_5)(t_1 + t_2)(12\lambda_\cdot^2 \ldots)} > 0$
Square mass:	$\frac{3(2\lambda_\cdot + t_1)(2\lambda_\cdot - t_2)}{2(2 r_3 + r_5)(t_1 + t_2)} > 0$
Spin:	1
Parity:	Even

$J^P = 1^-$ — Massive particle

$J^P = 0^-$ — Massive particle

Pole residue:	$\frac{1}{r_2} > 0$
Square mass:	$\frac{2\lambda_\cdot + t_2}{r_2} > 0$
Spin:	0
Parity:	Odd

$J^P = 0^+$ — Massive particle

Pole residue:	$\frac{v_\cdot(-r_3 + r_4 - 2 t_2) + 4\lambda_\cdot(v_\cdot + 3 r_3 - 3 r_4 + 6 r_\cdot)}{8\lambda_\cdot v_\cdot(r_3 - r_4 + 2 r_4)} > 0$
Square mass:	$\frac{12\lambda^2 - \lambda_\cdot v_\cdot}{2 v_\cdot r_3 - 2 v_\cdot r_4 + 4 v_\cdot r_4} > 0$
Spin:	0
Parity:	Even

$k^\mu = (p, 0, 0, p)$ — Massless particle

Pole residue:	$\frac{1}{\lambda_\cdot} > 0$
Polarisations:	2

$J^P = 2^-$ — Massive particle

Pole residue:	$\frac{1}{r_1} > 0$
Square mass:	$\frac{2\lambda_\cdot + t_1}{2 r_1} > 0$
Spin:	2
Parity:	Odd

$J^P = 2^+$ — Massive particle

Pole residue:	$\frac{\lambda^2 + (2 r_3 - 2 r_1 + r_1) + \lambda_\cdot(4 r_1 - 4 r_3 + 2 r_4 + t_1)}{\lambda_\cdot(2 r_1 - 2 r_3 + r_4)(\lambda_\cdot + t_1)} > 0$
Square mass:	$\frac{\lambda_\cdot(2\lambda_\cdot + t_1)}{2(2 r_1 - 2 r_3 + r_4)(\lambda_\cdot + t_1)} > 0$
Spin:	2
Parity:	Even

Unitarity conditions

(Timeout after 10 seconds)