PSALTer results panel

Wave operator and propagator

Spin-parity form	Covariant form	Multiplicities
$0^+ \cdot \mathcal{J}$ == 0	$\partial_\alpha \mathcal{J}^\alpha$ == 0	1
Total expected gauge generators:		1

$0^+ \cdot \mathcal{J}$ $0^+ \cdot j$

0	0
0	$\frac{1}{\beta\, k^2}$

$0^+ \cdot \mathcal{J}$ $0^+ \cdot j$

$0^+ \cdot \mathcal{B}$ $0^+ \cdot \phi$

0	0
$\beta\, k^2$	0

$0^+ \cdot \mathcal{B}$ $0^+ \cdot \phi$

$1^- \cdot \mathcal{B}_\alpha$ $1^- \cdot \mathcal{J}^\alpha$

$2\,\alpha\, k^2$

$1^- \cdot \mathcal{B}_\alpha$ $1^- \cdot \mathcal{J}^\alpha$

$1^- \cdot \mathcal{J}_\alpha$ $1^- \cdot \mathcal{J}^\alpha$

$\frac{1}{2\,\alpha\, k^2}$

$1^- \cdot \mathcal{J}_\alpha$ $1^- \cdot \mathcal{J}^\alpha$

$$\mathcal{S} == \iiiint (\phi\, j + \mathcal{B}^\alpha\, \mathcal{J}_\alpha + \beta\, \partial_\alpha \phi\, \partial^\beta \phi - 2\,\alpha\, \partial_\alpha \mathcal{B}_\beta\, \partial^\beta \mathcal{B}^\alpha + 2\,\alpha\, \partial_\beta \mathcal{B}_\alpha\, \partial^\beta \mathcal{B}^\alpha)[t, x, y, z]\, dt\, dz\, dy\, dx$$

Massive and massless spectra

(No particles)

Massless particle

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

Massless particle

Poleresidue:	$\frac{1}{\beta} > 0$
Polarisations:	1

Unitarity conditions