

# PSALTer results panel

$$S = \iiint \int (\alpha_3 \mathcal{B}_\alpha \mathcal{B}^\alpha + \mathcal{B}^\alpha \mathcal{J}_\alpha + \alpha_2 \partial_\alpha \mathcal{B}^\alpha \partial_\beta \mathcal{B}^\beta + \alpha_1 \partial_\beta \mathcal{B}_\alpha \partial^\beta \mathcal{B}^\alpha) [t, x, y, z] dz dy dx dt$$

## Wave operator

$0^+ \mathcal{B}$

$0^+ \mathcal{B}^\dagger$

$\alpha_3 + (\alpha_1 + \alpha_2) k^2$

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

$1^- \mathcal{B}^\dagger_\alpha$

$\alpha_3 + \alpha_1 k^2$

## Saturated propagator

$0^+ \mathcal{J}$

$0^+ \mathcal{J}^\dagger$

$\frac{1}{\alpha_3 + (\alpha_1 + \alpha_2) k^2}$

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

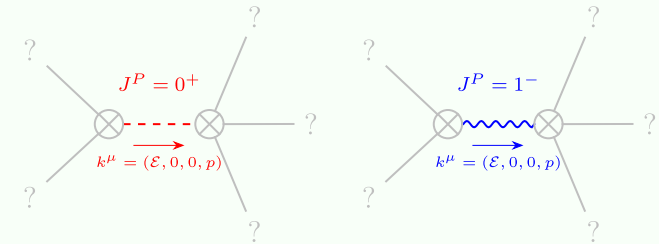
$1^- \mathcal{J}^\dagger_\alpha$

$\frac{1}{\alpha_3 + \alpha_1 k^2}$

## Source constraints

(No source constraints)

## Massive spectrum



Massive particle

Massive particle

Pole residue:	$\frac{1}{\alpha_1 + \alpha_2} > 0$
Square mass:	$-\frac{\alpha_3}{\alpha_1 + \alpha_2} > 0$
Spin:	0
Parity:	Even

Pole residue:	$-\frac{1}{\alpha_1} > 0$
Square mass:	$-\frac{\alpha_3}{\alpha_1} > 0$
Spin:	1
Parity:	Odd

## Massless spectrum

(No particles)

## Unitarity conditions

(Demonstrably impossible)