

# PSALter results panel

$$\mathcal{S} = \iiint \left( \varphi \left( \rho - \alpha_{\frac{1}{2}} \varphi \right) + \alpha_{\frac{1}{1}} \partial_{\alpha} \varphi \partial^{\alpha} \varphi \right) [t, x, y, z] dz dy dx dt$$

## Wave operator

$$\overset{\theta^+}{\cdot} \varphi \vdash \boxed{\begin{matrix} -\alpha_{\frac{1}{2}} + \alpha_{\frac{1}{1}} k^2 \end{matrix}}$$

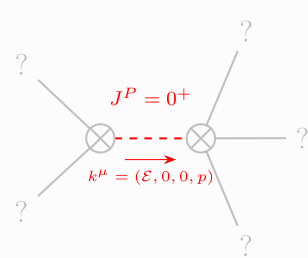
## Saturated propagator

$$\overset{\theta^+}{\cdot} \rho \vdash \boxed{\begin{matrix} \frac{1}{-\alpha_{\frac{1}{2}} + \alpha_{\frac{1}{1}} k^2} \end{matrix}}$$

## Source constraints

(There are no source constraints and no gauge symmetries)

## Massive spectrum



Massive particle

Pole residue:	$\frac{1}{\alpha_{\frac{1}{1}}} > 0$
Square mass:	$\frac{\alpha_{\frac{1}{2}}}{\alpha_{\frac{1}{1}}} > 0$
Spin:	0
Parity:	Even

## Massless spectrum

(There are no massless particles)

## Gauge symmetries

(Not yet implemented in PSALter)

## Unitarity conditions

$$\alpha_{\frac{1}{1}} > 0 \ \&\& \ \alpha_{\frac{1}{2}} > 0$$

## Validity assumptions

(Not yet implemented in PSALter)