# PSALTer results panel

$$S == \int\int\int\int \left( \underset{3}{\alpha_{\cdot}} \, \mathcal{B}_{\alpha} \, \mathcal{B}^{\alpha} + \mathcal{B}^{\alpha} \, \mathcal{J}_{\alpha} + \underset{2}{\alpha_{\cdot}} \, \partial_{\alpha} \mathcal{B}^{\alpha} \, \partial_{\beta} \mathcal{B}^{\beta} + \underset{1}{\alpha_{\cdot}} \, \partial_{\beta} \mathcal{B}_{\alpha} \, \partial^{\beta} \mathcal{B}^{\alpha} \right) [t, x, y, z] \, dz \, dy \, dx \, dt$$

# Wave operator

$$\begin{array}{c|cc} & \overset{0^+}{\cdot}\mathcal{B} & \\ \overset{0^+}{\cdot}\mathcal{B} & \underset{3}{\alpha_{\cdot}} + \left( \underset{1}{\alpha_{\cdot}} + \underset{2}{\alpha_{\cdot}} \right) k^2 & \overset{1^-}{\cdot}\mathcal{B}_{\alpha} \\ \overset{1^-}{\cdot}\mathcal{B}^{\alpha} & & \underset{3}{\alpha_{\cdot}} + \underset{1}{\alpha_{\cdot}} \, k^2 \end{array}$$

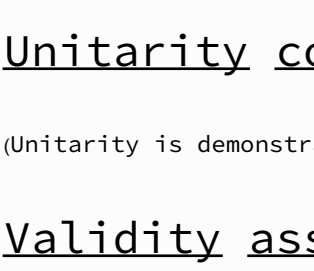
# Saturated propagator

$$\begin{array}{c|cc} & \overset{0^+}{\cdot}\mathcal{J} & \\ \overset{0^+}{\cdot}\mathcal{J} & \frac{1}{\underset{3}{\alpha_{\cdot}} + \left( \underset{1}{\alpha_{\cdot}} + \underset{2}{\alpha_{\cdot}} \right) k^2} & \overset{1^-}{\cdot}\mathcal{J}_{\alpha} \\ \overset{1^-}{\cdot}\mathcal{J}^{\alpha} & & \frac{1}{\underset{3}{\alpha_{\cdot}} + \underset{1}{\alpha_{\cdot}} \, k^2} \end{array}$$

# Source constraints

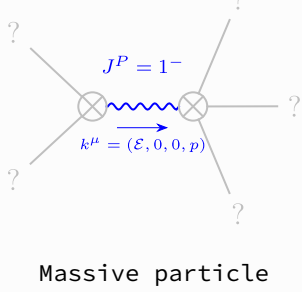
(There are no source constraints and no gauge symmetries)

# Massive spectrum




Massive particle

| | |
|---|---|
| Pole residue: | $\frac{1}{\underset{1}{\alpha_{\cdot}} + \underset{2}{\alpha_{\cdot}}} > 0$ |
| Square mass: | $-\frac{\underset{3}{\alpha_{\cdot}}}{\underset{1}{\alpha_{\cdot}} + \underset{2}{\alpha_{\cdot}}} > 0$ |
| Spin: | 0 |
| Parity: | Even |




Massive particle

| | |
|---|---|
| Pole residue: | $-\frac{1}{\underset{1}{\alpha_{\cdot}}} > 0$ |
| Square mass: | $-\frac{\underset{3}{\alpha_{\cdot}}}{\underset{1}{\alpha_{\cdot}}} > 0$ |
| Spin: | 1 |
| Parity: | Odd |

# Massless spectrum

(There are no massless particles)

# Gauge symmetries

(Not yet implemented in PSALTer)

# Unitarity conditions

(Unitarity is demonstrably impossible)

# Validity assumptions

(Not yet implemented in PSALTer)