

PSALTer results panel

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

Wave operator

$$\begin{array}{ccc} & \overset{0^+}{\mathcal{B}} & \\ \overset{0^+}{\mathcal{B}} \dagger & \boxed{(\alpha_1 + \alpha_2) k^2} & \overset{1^-}{\mathcal{B}}_\alpha \\ & \overset{1^-}{\mathcal{B}} \dagger^\alpha & \boxed{\alpha_1 k^2} \end{array}$$

Saturated propagator

$$\begin{array}{ccc} & \overset{0^+}{\mathcal{T}} & \\ \overset{0^+}{\mathcal{T}} \dagger & \boxed{\frac{1}{(\alpha_1 + \alpha_2) k^2}} & \overset{1^-}{\mathcal{T}}_\alpha \\ & \overset{1^-}{\mathcal{T}} \dagger^\alpha & \boxed{\frac{1}{\alpha_1 k^2}} \end{array}$$

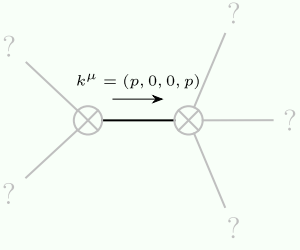
Source constraints

(No source constraints)

Massive spectrum

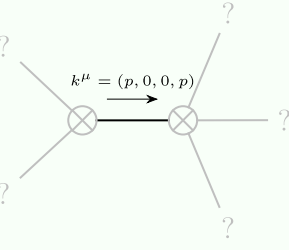
(No particles)

Massless spectrum



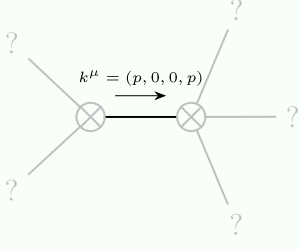
Massless particle

Pole residue:	$-\frac{1}{\alpha_1} - \frac{1}{\alpha_1 + \alpha_2} > 0$
Polarisations:	1



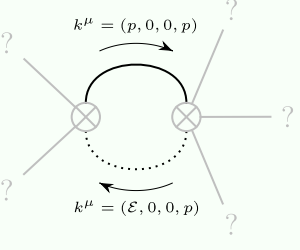
Massless particle

Pole residue:	$-\frac{1}{\alpha_1} > 0$
Polarisations:	2



Massless particle

Pole residue:	$\frac{1}{\alpha_1} + \frac{1}{\alpha_1 + \alpha_2} > 0$
Polarisations:	1



Quartic pole

Pole residue:	$0 < -\frac{\alpha_2 p^2}{\alpha_1 (\alpha_1 + \alpha_2)} \ \&\& \ -\frac{\alpha_2 p^2}{\alpha_1 (\alpha_1 + \alpha_2)} > 0$
Polarisations:	1

Unitarity conditions

(Demonstrably impossible)