

Particle spectrograph

Wave operator and propagator

Quadratic (free) Lagrangian density

$$\gamma \mathcal{B}_\alpha \mathcal{B}^\alpha + \mathcal{B}^\alpha \mathcal{J}_\alpha - 2 \alpha \partial_\alpha \mathcal{B}_\beta \partial^\beta \mathcal{B}^\alpha + 2 \alpha \partial_\beta \mathcal{B}_\alpha \partial^\beta \mathcal{B}^\alpha$$

(No source constraints)

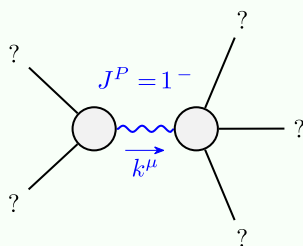
$$\mathcal{B}_{1-}^{\#1} + \alpha \boxed{\gamma + 2 \alpha k^2} \mathcal{B}_{1-}^{\#1}$$

$$\mathcal{J}_{1-}^{\#1} + \alpha \boxed{\frac{1}{\gamma + 2 \alpha k^2}} \mathcal{J}_{1-}^{\#1}$$

$$\mathcal{J}_{0+}^{\#1} + \boxed{\frac{1}{\gamma}} \mathcal{J}_{0+}^{\#1}$$

$$\mathcal{B}_{0+}^{\#1} + \boxed{\gamma}$$

Massive and massless spectra



Massive particle

Pole residue:	$-\frac{1}{2\alpha} > 0$
Polarisations:	3
Square mass:	$-\frac{\gamma}{2\alpha} > 0$
Spin:	1
Parity:	Odd

(No massless particles)

Unitarity conditions

$$\alpha < 0 \ \&\& \ \gamma > 0$$