Particle spectrograph

Wave operator and propagator

Quadratic (free) action

$$\mathcal{S} == \int\int\int\int (\gamma\, \mathcal{B}_\alpha\, \mathcal{B}^\alpha + \mathcal{B}^\alpha\, \mathcal{T}_\alpha + 2\,\alpha\,(-\partial_\alpha \mathcal{B}_\beta + \partial_\beta \mathcal{B}_\alpha)\,\partial^\beta \mathcal{B}^\alpha)[t, x, y, z]\, dz\, dy\, dx\, dt$$

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

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

(No source constraints)

$\mathcal{T}_{1^-}^{\#1}{}_\alpha$

$\mathcal{T}_{1^-}^{\#1}\,\dagger^\alpha$ | $\frac{1}{\gamma + 2\,\alpha\,k^2}$

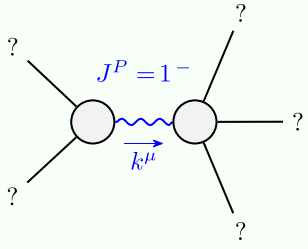
$\mathcal{T}_{0^+}^{\#1}\,\dagger$ | $\frac{1}{\gamma}$

$\mathcal{B}_{0^+}^{\#1}\,\dagger$ | γ

$\mathcal{T}_{0^+}^{\#1}$

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

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

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