Lagrangian density

$$\gamma\,\mathcal{B}_\alpha\,\mathcal{B}^\alpha + \beta\,\partial_\alpha\mathcal{B}^\alpha\,\partial_\beta\mathcal{B}^\beta + \alpha\,\partial_\beta\mathcal{B}_\alpha\,\partial^\beta\mathcal{B}^\alpha$$

Added source term: $\mathcal{B}^\alpha\,\mathcal{J}_\alpha$

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

$\mathcal{B}_{0^+}^{\#1}\dagger$ $\boxed{\gamma + (\alpha+\beta)\,k^2}$

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

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

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

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

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

$\mathcal{T}_{0^+}^{\#1}\dagger$ $\boxed{\dfrac{1}{\gamma+(\alpha+\beta)\,k^2}}$

(No source constraints)

Unitarity conditions

(Unitarity is demonstrably impossible)

$J^P = 1^-$, $k^\mu$
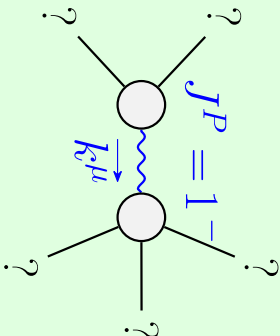
| Massive particle | |
|---|---|
| Pole residue: | $-\dfrac{1}{\alpha} > 0$ |
| Polarisations: | 3 |
| Square mass: | $-\dfrac{\gamma}{\alpha} > 0$ |
| Spin: | 1 |
| Parity: | Odd |

$J^P = 0^+$, $k^\mu$
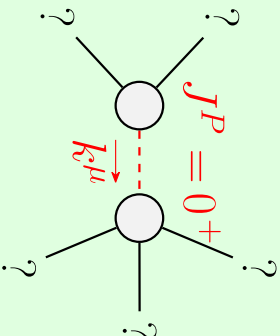
| Massive particle | |
|---|---|
| Pole residue: | $\dfrac{1}{\alpha+\beta} > 0$ |
| Polarisations: | 1 |
| Square mass: | $-\dfrac{\gamma}{\alpha+\beta} > 0$ |
| Spin: | 0 |
| Parity: | Even |

(No massless particles)