

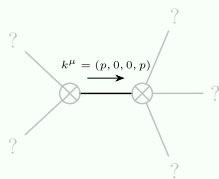
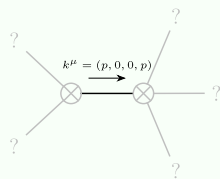
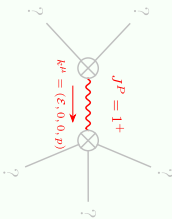
## Wave operator and propagator

$$\begin{aligned}
S = & \iiint (\beta \, \mathcal{B}_{\alpha\beta} \, \mathcal{B}^{a\beta} + f^{\alpha\beta} \, \tau_{\alpha\beta} + \mathcal{B}^{a\beta} \, \mathcal{J}_{\alpha\beta} - \frac{1}{3} \alpha (2 \, \partial_\beta \mathcal{B}_{\alpha\chi} - \partial_\chi \mathcal{B}_{\alpha\beta}) \, \partial^\chi \mathcal{B}^{a\beta} - \\
& 2 \, c_1 (\partial_\beta f^\chi_\chi \, \partial^\beta f^\alpha_\alpha - 2 \, \partial^\beta f^\alpha_\alpha \, \partial_\chi f^\chi_\beta + \partial_\beta f^{a\beta} (\partial_\chi f^\chi_\alpha + 2 \, \partial_\chi \mathcal{B}^\chi_\alpha) - \\
& \quad \partial_a \mathcal{B}^{a\beta} \, \partial_\chi \mathcal{B}^\chi_\beta - 2 \, \partial^\beta f^\alpha_\alpha \, \partial_a \mathcal{B}^\chi_\beta + \partial_a f^\chi_\beta \, \partial^\chi f^{a\beta} - 2 \, \partial_a \mathcal{B}_{\beta\chi} \, \partial^\chi f^{a\beta} - \\
& \quad \partial_\chi f_{\alpha\beta} \, \partial^\beta f^{a\beta} - 2 \, \partial_\chi \mathcal{B}_{a\beta} \, \partial^\chi f^{a\beta} + \partial_\beta \mathcal{B}_{\alpha\chi} \, \partial^\chi \mathcal{B}^{a\beta} - \partial_\chi \mathcal{B}_{a\beta} \, \partial^\chi \mathcal{B}^{a\beta}) + \\
& c_2 (-\partial_\beta f^\chi_\chi \, \partial^\beta f^\alpha_\alpha + 2 \, \partial^\beta f^\alpha_\alpha \, \partial_\chi f^\chi_\beta - \partial_\beta f^{a\beta} (\partial_\chi f^\chi_\alpha + 2 \, \partial_\chi \mathcal{B}^\chi_\alpha) + \partial_a \mathcal{B}^{a\beta} \, \partial_\chi \mathcal{B}^\chi_\beta + 2 \, \partial^\beta f^\alpha_\alpha \\
& \quad \partial_\chi \mathcal{B}^\chi_\beta - 2 \, \partial_a f^\chi_\beta \, \partial^\chi f^{a\beta} - 2 \, \partial_a \mathcal{B}_{\beta\chi} \, \partial^\chi f^{a\beta} + \partial_\beta f^\chi_{\alpha\chi} \, \partial^\chi f^{a\beta} + \partial_\beta \mathcal{B}_{\alpha\chi} \, \partial^\chi f^{a\beta} + \partial_\chi f^\beta_{\beta\alpha} \\
& \quad \partial^\beta f^{a\beta} - 2 \, \partial_\chi \mathcal{B}_{a\beta} \, \partial^\chi f^{a\beta} + 3 \, \partial_\beta \mathcal{B}_{\alpha\chi} \, \partial^\chi \mathcal{B}^{a\beta} - \partial_\chi \mathcal{B}_{a\beta} \, \partial^\chi \mathcal{B}^{a\beta})) [t, x, y, z] d \, x \, d \, y \, d \, z \, d \, t
\end{aligned}$$

[illegible]

## Massive and massless spectra

Poleresidue:	$\frac{6}{\alpha} > 0$
Square mass:	$\frac{3\beta}{\alpha} > 0$
Spin:	1
Parity:	Even



Massless particle	Massless particle
Poleresidue: $\left  \frac{1}{2c_1+c_2} \right  > 0$	Poleresidue: $\left  \frac{1}{2c_1-c_2} \right  > 0$
Polarisations: $\left  2 \right $	Polarisations: $\left  1 \right $

## Unitarity conditions