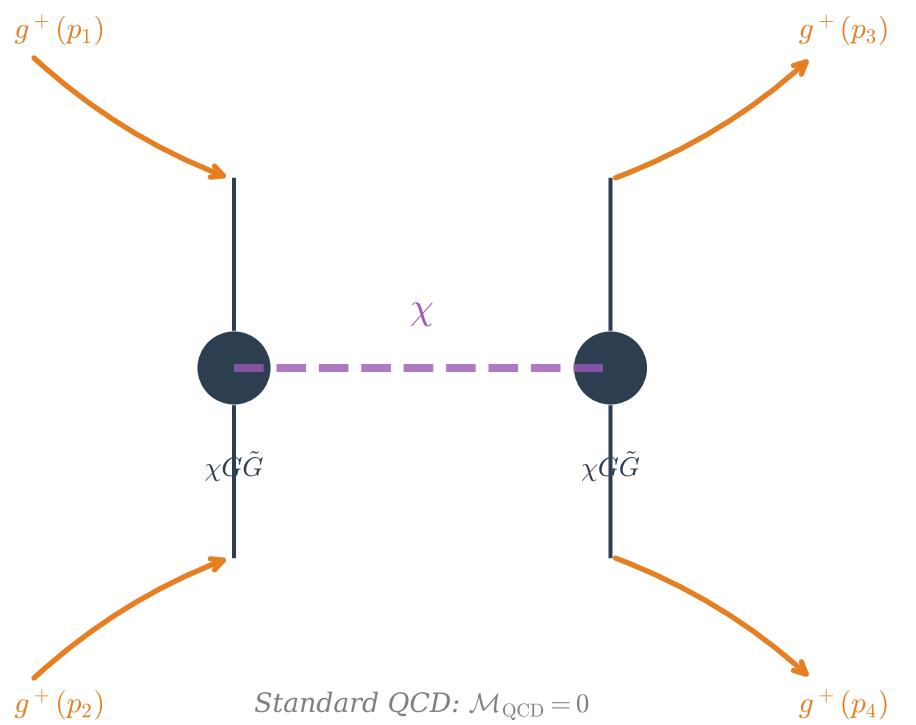
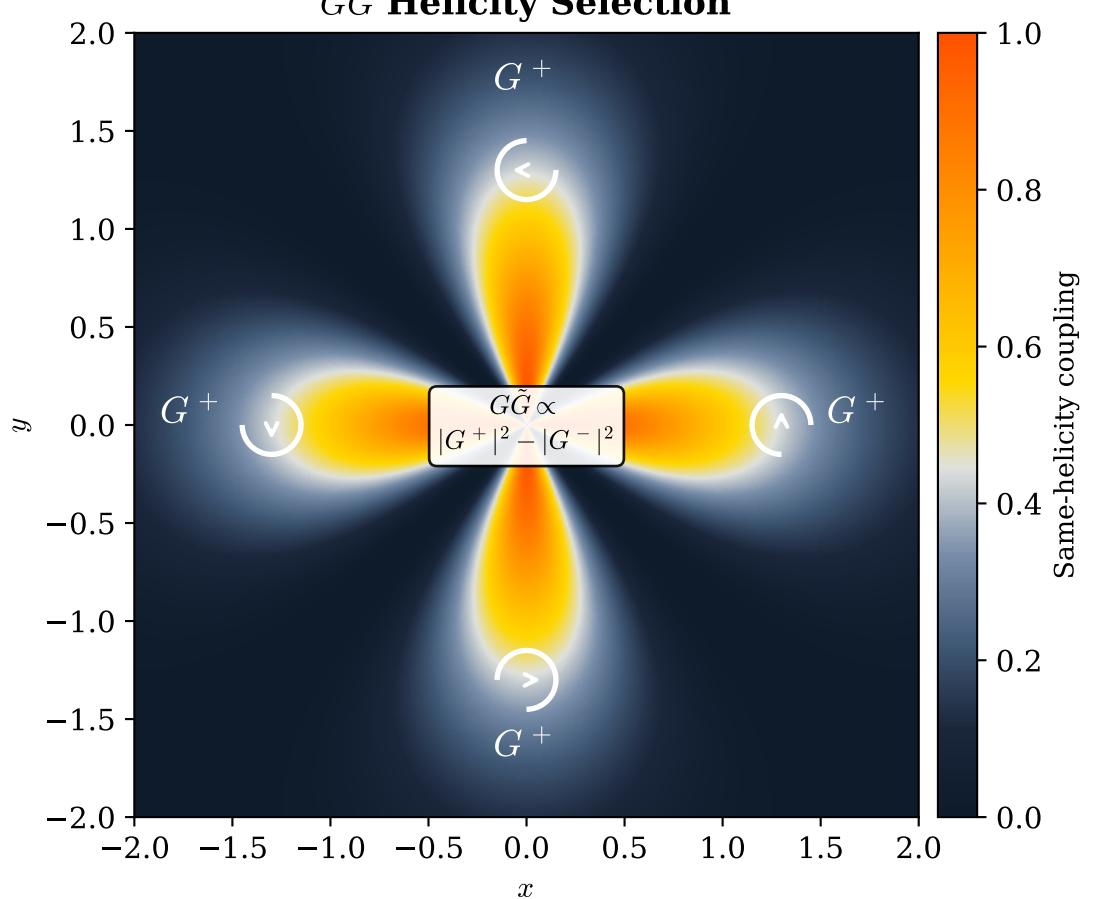


$g^+ g^+ \rightarrow g^+ g^+$ via χ Exchange



$G\tilde{G}$ Helicity Selection



Crossing Symmetry Verification

Original

$$q_L^- g^+ \rightarrow q_R^+ g^+$$

Vertex:

$$[2k]\langle k1 \rangle$$

s-channel

$1 \leftrightarrow 4$



$-p\rangle = e^{i\phi}|p\rangle$

Crossed

$$\bar{q}_R^+ g^+ \rightarrow \bar{q}_L^- g^+$$

Vertex:

$$e^{i\phi}[2k][k4]$$

u-channel

CPT: $\bar{\psi}_L \gamma^\mu (\partial_\mu \chi) \psi_R \rightarrow \bar{\psi}_R \gamma^\mu (\partial_\mu \chi) \psi_L$

Cross-Section Suppression (GeV scale)

$$\mathcal{M} = \frac{C_\chi^2 \alpha_s^2}{(8\pi)^2} \cdot \frac{[12]^2 [34]^{*2}}{s}$$

