



(c)

CG Amplitude (one loop):

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

where $C_\chi = N_f/2$ (anomaly coefficient)

Cross-section ratio (GeV scale):

$$\frac{\sigma(g^+ g^+ \rightarrow g^+ g^+)}{\sigma_{\text{tot}}} \sim 10^{-9}$$

• Unique CG signature: non-zero where QCD vanishes