

Prompt Photons with longitudinally polarized proton beams

Friday 1 November 2024 15:35 (15 minutes)

Complete one-loop QCD corrections to the process $q\bar{q}g\gamma \rightarrow 0$ are presented, specifically focusing on longitudinal polarization of protons, using the SANC framework. The helicity amplitudes for three channels have been derived: quark-antiquark annihilation, gluon Compton scattering, photon Compton scattering.

Furthermore, a numerical estimation of polarized observables, including cross sections and both single and double asymmetries, has been obtained using the Monte Carlo generator ReneSANCe.

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Session Classification: High Energy Physics

Track Classification: High Energy Physics