

Measurement of the Inclusive Isolated Prompt Photon production cross section in $p\bar{p}$ collisions at $\sqrt{s}=1.96\text{TeV}$ using the full CDF dataset

The production of photons with large transverse energy in hadronic collisions is an important testing ground for perturbative Quantum Chromodynamics (pQCD), enabling to probe parton distribution functions (PDFs) and the parton-to-photon fragmentation functions (FFs). In addition, high-ET photons can also constitute an irreducible background for important searches such as $H\rightarrow\gamma\gamma$, or SUSY and extra-dimensions with energetic photons in the final state.

We present the measurement of the cross section for the inclusive production of isolated prompt photons in $p\bar{p}$ collisions at the Tevatron, using the full dataset collected with the upgraded Collider Detector at Fermilab (CDF). Measurements are performed as a function of the photon transverse energy in the range $30\text{ GeV} < E_T < 500\text{ GeV}$ and pseudorapidity region $|\eta| < 1.0$. The results are compared to the state-of-art calculations.

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