

Prompt-photon plus jet associated photoproduction at HERA in the parton Reggeization approach

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Summary

We study the photoproduction of isolated prompt photons associated with hadron jets in the framework of the parton Reggeization approach. The cross section distributions in the transverse energies and pseudorapidities of the prompt photon and the jet as well as the azimuthal decorrelation variables measured by the H1 and ZEUS collaborations at DESY HERA are nicely described by our predictions. The main improvements with respect to previous studies in the k_T -factorization framework include the application of the Reggeized-quark formalism, the generation of exactly gauge-invariant amplitudes with off-shell initial-state quarks, and the exact treatment of the $\gamma R \rightarrow \gamma g$ box contribution with off-shell initial-state gluons.

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