

Isolated photon production in the color dipole picture

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A phenomenological study of the isolated photon production within the color dipole formalism is performed. Using the dipole approach we investigate the isolated photon cross section differential in the transverse momentum of the photon in pp collisions at RHIC and LHC energies considering three different phenomenological models for the dipole cross section. The predictions for the rapidity dependence of the nuclear ratio is also presented. As a further test of the color dipole formalism, we study also the correlation function in azimuthal angle between the photon and a forward pion $\Delta\phi$ for different energies and photon rapidities. The characteristic double-peak structure of the correlation function around $\Delta\phi \simeq \pi$ found for photons at forward rapidities in pp and pA collisions can be tested by future measurements.

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