

Leading neutron production at the EIC and LHeC: estimating the impact of the absorptive corrections

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Leading neutron (LN) production in ep collisions at high energies is investigated using the color dipole formalism and taking into account saturation effects. We update the treatment of absorptive effects and estimate the impact of these effects on LN spectra in the kinematical range that will be probed by the Electron Ion Collider (EIC) and by the Large Hadron electron Collider (LHeC). We demonstrate that Feynman scaling, associated to saturation, is not violated by the inclusion of absorptive effects. Moreover, our results indicate that the LN spectrum is strongly suppressed at small photon virtualities. These results suggest that absorptive effects cannot be disregarded in future measurements of the γ - π cross section to be extracted from data on leading neutron production.

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