

Final-state interactions in electron-ion collisions in eHIJING

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Jet plays a central role in physics at future electron-ion colliders, bridging experimental observables and the partonic structure of the atomic nuclei at high energy. In large nuclei, enhanced final-state jet-nucleus interactions cause transverse momentum broadening of jets and modifications of jet fragmentation. Such modifications are also channels to probe small- x gluon distribution in the nucleus. We developed the electron-Jet-Multiple-Interaction-Generator (eHIJING) to study the interplay of momentum broadening and medium-modified jet fragmentation and further analyzed theoretical uncertainty using different calculations of in-medium parton splittings. The model is applied to describe semi-inclusive deep inelastic scattering data from CLAS, HERMES, and EMC experiments. I will also discuss future developments towards the study at the electron-ion colliders.

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