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Dihadron Correlation in the eA program at an Electron Ion Collider LIANG ZHENG, BNL and IOPP/CCNU, EIC SCIENCE TASKFORCE TEAM — Deep inelastic scattering (DIS) experiments, in which one probes the internal landscape of the proton or nucleus by scattering a lepton on it, are a very powerful tool to study QCD. Past results from HERA were very successful in determining the quark structure of a nucleon and some light nuclei. Meanwhile gluons, which are responsible for the quark confinement and much of the hadronic mass, are significantly less well-understood than quarks, especially in the saturation regime, where their self-interactions dominate and non-linear QCD effects supersede. In the future, a high energy, high luminosity Electron-Ion Collider (EIC) may prove essential to help us to unveil the profound collective behavior of densely packed gluons deep into the saturation region. Being sensitive to the gluon dynamics, dihadron correlations are believed to be one of the most compelling measurements in the eA program at EIC to identify and characterize saturation physics. In this talk, I am going to discuss some Monte Carlo simulation results of dihadron correlation in e+A collisions and compare with theoretical calculations in the context of gluon saturation for the proposed EIC at Brookhaven National Lab.

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