

Abstract Submitted
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Prospects for Studies of Short-Range Correlations in Nuclei at the Future Electron-Ion Collider¹ ALEXANDER JENTSCH, Brookhaven National Laboratory — Quantum Chromodynamics (QCD) provides the framework for understanding the strong nuclear force. However, due to the nature of nuclear dynamics, our understanding of the dynamical forces between nucleons in a nucleus is as-of-yet incomplete. The EMC effect describes the suppression of the ratio of the structure function, F_2 , between a heavy nucleus and a deuteron for $x > .3$. Short-range correlations (SRCs) were proposed as one possible explanation of the EMC Effect, making the study of SRCs valuable for understanding QCD. SRCs are best studied in e+A collisions, either using a fixed target, or an e+A collider. In January 2020, CD-0 was approved for an Electron-Ion Collider (EIC) at Brookhaven National Laboratory. The EIC will enable collisions of electrons with a wide range of nuclei at a range of center of mass energies, enabling detailed study of SRCs. In this talk, I describe a new study of SRCs using the novel e+A MC event generator, BeAGLE. In particular, we use BeAGLE to study the sensitivity of observables to high internal nucleon momentum via incoherent diffractive J/Psi vector meson production. By tagging the spectator nucleon from the deuteron breakup in full EIC detector simulations in the far-forward region ($\Theta < 2^\circ$) access to the SRCs in the deuteron is assessed.

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