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Study of Short-Range nuclear Correlations in light nuclei using BeAGLE event generator

Tuesday 23 March 2021 16:20 (15 minutes)

Nuclear dynamics at short distances among nucleons is one of the most outstanding phenomena in nuclear physics. Understanding the role of QCD in generating nuclear forces is important for uncovering the underlying physics of Short-Range Correlations (SRCs). In recent years, SRCs has been observed from light to heavy nuclei using fixed target experiments at Jefferson lab via high energy electron-nucleus scattering. In this talk, I will talk about the opportunity of studying SRCs using light nuclei with collider experiments, e.g., the Electron-Ion Collider (EIC). The experimental technique of studying the light nuclei can be based on exclusive processes with tagging final-state particles, in order to fully control the initial state of the target wavefunction. In particular, incoherent diffractive production of J/ψ particle off deuteron will be presented. In addition, the spectral function in light nuclei has been recently modeled in the BeAGLE event generator, where the decay kinematics of the light nuclei and their influence on the very forward detector design at the EIC will be discussed.

Presenter: TU, Zhoudunming (BNL)

Session Classification: Day 2 (mostly exclusive reactions)

Track Classification: Exclusive reactions & tools for GPDs & Wigner functions,...