

# XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



Contribution ID: 180

Type: **Contributed Talk**

## Collision geometry and breakup determination in eA collisions at the EIC

*Tuesday, 24 March 2020 16:30 (20 minutes)*

The Electron-Ion Collider (EIC) is a next generation accelerator, which is designed to answer longstanding questions in nuclear physics. The EIC with its wide range of center of mass energies from 20 to 140 GeV, polarized beams, and beam species, as well as high luminosity, is designed to precisely image the quarks and gluons and their interactions, and to explore the new QCD frontier of strong color fields in nuclei, in short, to understand how matter at its most fundamental level is made. Many nuclear effects of interest at an EIC depend on the geometry of the collision, e.g., the free path length, the impact parameter, and the nuclear thickness that is probed by the photon in the interaction. In this work, a systematic investigation of the collision geometry using the detection of neutrons emitted under small angles is presented. The study is based on the BeAGLE event generator, which is a hybrid model of combining Pythia-6, DPMJet, and Fluka for simulating the deep inelastic scattering process of electron-ion collisions. Studies to tune the Monte Carlo model in BeAGLE on existing data and to determine the detector requirements of a Zero-Degree-Calorimeter (ZDC) will be presented.

**Primary author:** Ms CHANG, Wan (BNL & CCNU)

**Presenter:** Ms CHANG, Wan (BNL & CCNU)

**Session Classification:** Future Experiments

**Track Classification:** Future Experiments