Contribution ID: **176** Type: **not specified**

Geometry tagging for heavy ions at JLEIC

Wednesday 18 April 2018 12:18 (18 minutes)

Geometry tagging is an experimental analysis technique for selecting event samples where we can, on a statistical basis, control the geometry of the collision in order to make more incisive physics measurements. This technique has been heavily exploited in heavy ion (AA) collisions at RHIC and the LHC, and played an essential role in the discovery and detailed characterization of the quark gluon plasma, but it has seen only very limited use to date in deep-inelastic scattering. Several physics measurements at the EIC would benefit significantly from the use of this technique, including studies of gluon anti-shadowing, studies of parton propagation, attenuation and hadronization in the nucleus, and ultimately the search for parton saturation. Using geometry tagging, we can create an event sample in eAu collisions with a saturation scale or an average path length equivalent to a minimum bias nucleus of size A=600-800. The JLEIC full-acceptance detector, with full acceptance for forward-going neutrons, protons and nuclear fragments and a high data-taking rate should be ideally suited to such geometry tagging. We improve, tune, and apply existing modeling codes, BeAGLE, Sartre, and GEMC, and detector descriptions to study this physics.

Authors: MOROZOV, V.S. (Jefferson Lab, Newport News, VA); ACCARDI, A. (Jefferson Lab, Newport News, VA); BAKER, M. (MDBPADS LLC, Miller Place, NY); BROOKS, W. (Santa Maria University, Valparaiso, Chile); DUPRE, R. (IPN Orsay, Orsay, France); EHRHART, M. (IPN Orsay, Orsay, France); FOGLER, C. (Old Dominion University, Norfolk, VA); HAFIDI, K. (ANL, Lemont, IL); HYDE, C. (Old Dominion University, Norfolk, VA); NADEL-TURONSKI, P. (SUNY, Stony Brook, NY); PARK, K. (Jefferson Lab, Newport News, VA); STUKES, J. (Morehouse College, Atlanta, GA); SY, A. (Jefferson Lab, Newport News, VA); TOLL, T. (Shiv Nadar University, Uttar Pradesh, India); WEI, G. (Jefferson Lab, Newport News, VA); ZHENG, L. (Central China Normal University, Hubei Sheng, China)

Presenter: MOROZOV, V.S. (Jefferson Lab, Newport News, VA)

Session Classification: WG7: Future of DIS

Track Classification: WG7: Future of DIS