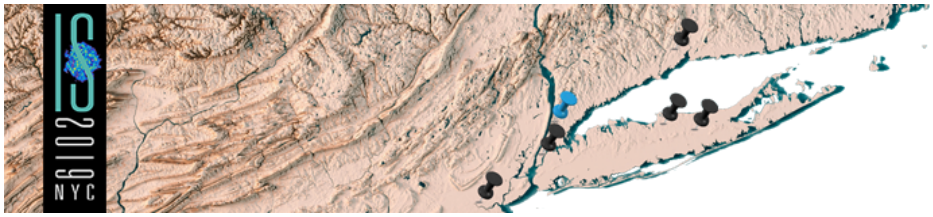

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New heavy flavor program for the future Electron Ion Collider

Tuesday, 25 June 2019 16:21 (1 minute)

The proposed high-luminosity high-energy Electron Ion Collider (EIC) will provide one of the cleanest environments to precisely determine the nuclear parton distribution functions (nPDFs) in a wide x-Q^2 phase space. Heavy flavor production at the EIC can access up to the confinement boundary, which allows us to directly study nPDFs, quark/gluon fragmentation processes, and energy loss within the poorly constrained high Bjorken-x region. The group at Los Alamos National Laboratory propose to develop a new experimental and theoretical physics program to study the heavy flavor products, flavor tagged jets and heavy flavor hadron-jet correlations in the nucleon/nucleus going direction at the future EIC. The proposed measurements will provide a unique path to explore the flavor dependent fragmentation functions and energy loss in heavy nucleus, which can constrain the initial state effects for previous and ongoing heavy ion measurements at the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC). Details of the proposed physics program will be discussed in this presentation.

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