Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Detector simulations for EIC at JLab ZHIWEN ZHAO, Jefferson Lab and ODU — An Electron-Ion Collider (EIC) is considered to be the next machine to study the internal structure of hadrons and nuclei on the basis of the fundamental theory of strong interactions, Quantum Chromodynamics (QCD). Jefferson Lab (JLab) has conducted both EIC accelerator and detector designs. The detector simulation "EIC_GEMC" is based on the simulation framework of GEant4 Monte-Carlo (GEMC). It works like a C++ wrapper around GEANT4. Anything specific to a particular detector like geometry, material, field, sensitivity is put into external input. And it has the ability to customize hit processing routine and output according to various detectors. Overall, these features enable simulating individual sub-detectors and the whole detector in the same framework and make it effortless to switch between them. The main features of simulation "EIC_GEMC" and some simulation results will be the main focus of the talk.

Zhiwen Zhao
Jefferson Lab and ODU