EIC detector simulations in FairRoot framework ALEXANDER KISELEV, BNL, ERHIC TASK FORCE TEAM — The long-term RHIC facility upgrade plan foresees the addition of a high-energy electron beam to the existing hadron accelerator complex thus converting RHIC into an Electron-Ion Collider (eRHIC). A dedicated EIC detector, designed to efficiently register and identify deep inelastic electron scattering (DIS) processes in a wide range of center-of-mass energies is one of the key elements of this upgrade. Detailed Monte-Carlo studies are needed to optimize EIC detector components and to fine tune their design. The simulation package foreseen for this purpose (EicRoot) is based on the FairRoot framework developed and maintained at the GSI. A feature of this framework is its level of flexibility, allowing one to switch easily between different geometry (ROOT, GEANT) and transport (GEANT3, GEANT4, FLUKA) models. Apart from providing a convenient simulation environment the framework includes basic tools for visualization and allows for easy sharing of event reconstruction codes between higher level experiment-specific applications. The description of the main EicRoot features and first simulation results will be the main focus of the talk.

Alexander Kiselev
BNL