

# XXIV International Workshop on Deep-Inelastic Scattering and Related Subjects (DIS16)



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## The path through sPHENIX and fsPHENIX toward an EIC detector at eRHIC

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eRHIC is one of the options proposed as a high luminosity, polarized Electron-Ion Collider (EIC) that is based on using one of the RHIC hadron rings and a multipass Energy Recovery Linac. A beam of polarized electrons with an energy up to 21 GeV would collide with a variety of ion species, from polarized protons with a top energy of 250 GeV to fully-stripped uranium ions with energies up to 100 GeV/u. It will allow for covering a center-of-mass energy range up to 145 GeV for polarized e+p, and up to 90 GeV for e+A (for large A) collisions. One of the possible detectors to perform precision studies of the partonic structure of hadronic matter will be an upgraded PHENIX detector. The path will lead through the detector that will be built around the BaBar magnet, sPHENIX, with its components at midrapidity  $|\eta| < 1$  followed by an sPHENIX-Forward upgrade and additional modifications specific to the successive EIC detector. We will discuss the approach that leads to that EIC detector and present goals and requirements for a broad set of measurements from day-1 of eRHIC.

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