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## **ePHENIX: An Electron Ion Collider (EIC) Detector Built Around the BaBar Magnet**

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As a particular realization of an electron ion collider (EIC), the eRHIC project envisions the addition of a high intensity polarized electron beam to the existing RHIC facility, providing e+p and e+A collisions and enabling precision studies of the partonic structure of hadronic matter. To fully exploit the physics potential of eRHIC, the PHENIX Collaboration is proposing a detector built upon sPHENIX, a planned upgrade of the current PHENIX experiment. This new detector, ePHENIX, uses the sPHENIX superconducting solenoid and barrel calorimetry and adds to this foundation precision tracking, particle-identification and calorimetry in the barrel, electron-going and hadron-going directions, opening a broad range of exciting EIC physics measurements (see

<http://arxiv.org/abs/1402.1209>). We give an overview of ePHENIX detector design and discuss its broad capabilities for both nucleon structure imaging and high density nuclear matter studies.

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