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eRHIC, Design of an Electron Ion Collider at Brookhaven Natl Laboratory

Thursday 13 October 2016 15:00 (1 hour)

Brookhaven National Laboratory is preparing a proposal for eRHIC, an electron ion collider with a peak luminosity of 10ˆ33 cmˆ-2sˆ-1, upgradable to 10ˆ34 cm-2s-1 and center of mass energies which range from 20 GeV to 140 GeV. ERHIC is designed to provide access to the entire Electron Ion collision physics program. A major component of eRHIC is the RHIC collider together with its injector complex for protons and heavy ions which require only minor modifications to provide the ion beams for eRHIC. The electron part of eRHIC is based on a multi-turn superconducting energy recovery linac which will provide spin polarized electrons of up to 18 GeV. In an effort to minimize technical risks, a solution based of an electron storage ring is being worked out as an alternative solution with similar collider performance. The presentation will discuss both solutions and will describe the ongoing R&D program which is carried out to finalize the conceptional eRHIC design.

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