



Contribution ID: 1635 Contribution code: MOPG02

Type: **Poster Presentation**

## An update on EIC rapid cycling synchrotron optics

*Monday, 20 May 2024 16:00 (2 hours)*

The Electron-Ion Collider (EIC) requires continuous replacement of the stored electron bunches to facilitate arbitrary spin patterns in the Electron Storage Ring (ESR). This is accomplished by a dedicated, spin transparent Rapid Cycling Synchrotron (RCS). The dynamic range of the accelerator is from 400 MeV to 18 GeV. To maintain stability throughout the acceleration ramp, the linear and nonlinear optics must be tuned accordingly. In this paper, we will discuss the updated linear optics, chromaticities, and dynamic aperture of the RCS.

### Footnotes

### Funding Agency

Work supported by Brookhaven Science Associates, LLC under Contract No. DE-SC0012704 with the U.S. Department of Energy.

### Paper preparation format

LaTeX

### Region represented

North America

**Primary author:** LOVELACE III, Henry (Brookhaven National Laboratory)

**Co-authors:** MONTAG, Christoph (Brookhaven National Laboratory); LIN, Fanglei (Oak Ridge National Laboratory); Dr RANJBAR, Vahid (Brookhaven National Laboratory (BNL))

**Presenter:** Dr RANJBAR, Vahid (Brookhaven National Laboratory (BNL))

**Session Classification:** Monday Poster Session

**Track Classification:** MC2: Photon Sources and Electron Accelerators: MC2.A04 Circular Accelerators