



Contribution ID: 934 Contribution code: TUPG60

Type: **Poster Presentation**

## Dynamic aperture in a wiggler dominated ring electron cooler of the EIC

*Tuesday, 21 May 2024 16:00 (2 hours)*

The Ring Electron Cooler (REC) is currently under design for use in the Electron Ion Collider (EIC) for hadron cooling. In this device the hadrons are cooled by the electrons and the electrons are cooled through radiation damping, which is enhanced by a number of 4 meter-long wigglers with 2.4 T field. When optimizing the beam envelope, intra beam scattering and Touschek scattering are also considered. Using a field configuration with additional focusing to keep the emittance at an acceptable value, these wigglers make up a substantial portion of the ring, with the wiggler section contributing the majority of the ring's chromaticity. In this paper, the effects of the REC's unusual properties on dynamic aperture are analyzed and a correction scheme is proposed.

### 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

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**Session Classification:** Tuesday Poster Session

**Track Classification:** MC2: Photon Sources and Electron Accelerators: MC2.T15 Undulators and Wigglers