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Dynamic aperture of the EIC electron storage ring

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Design of the electron-ion collider (EIC) at Brookhaven National Laboratory continues to be developed. Particularly, the collider storage ring lattices have been optimized. Dynamic aperture of the evolving lattices must be kept sufficiently large, as required. In this paper, we discuss the collider Electron Storage Ring, where the lattice updates include various modifications of the interaction region layout, optimization of arc dipole configuration and the number of magnet types, and changes related to the use of existing magnets. Optimization of non-linear chromaticity correction for an updated lattice and the latest results of dynamic aperture studies are presented.

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