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## Assessing global crabbing scheme feasibility for Electron-Ion Collider

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The Electron-Ion Collider (EIC) plans to utilize the local crabbing crossing scheme. This paper explores the feasibility of adopting a single crab cavity with adjusted voltage, inspired by the successful global crabbing scheme in KEKB, to restore effective head-on collisions. Using weak-strong simulations, the study assesses the potential of this global crabbing scheme for the EIC while emphasizing the need for adiabatic cavity ramping to prevent luminosity loss. Additionally, the research outlines potential risks associated with beam dynamics in implementing this scheme.

### Footnotes

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### Paper preparation format

LaTeX

### Region represented

North America

**Primary author:** XU, Derong (Brookhaven National Laboratory)

**Co-authors:** MONTAG, Christoph (Brookhaven National Laboratory); MARX, Daniel (Brookhaven National Laboratory); HAO, Yue (Facility for Rare Isotope Beams); LUO, Yun (Brookhaven National Laboratory)

**Presenter:** XU, Derong (Brookhaven National Laboratory)

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