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Understanding the RHIC triplet magnet vibrations in preparation for EIC

Wednesday 13 August 2025 16:00 (2 hours)

Throughout its operation, the RHIC triplet magnets have been subject to a mechanical vibration around 10 Hz. These mechanical vibrations were found to produce a beam orbit jitter that was detrimental to the collider luminosity. During RHIC operation, this has been effectively mitigated by the implementation of a fast feedback orbit control system. For the Electron Ion Collider (EIC) Hadron Storage Ring (HSR), the RHIC triplet package will be modified, magnets will be removed, and the cryogenic lines will be rearranged inside the cryostat. A comprehensive analysis of the RHIC triplet vibration has been undertaken to ensure that the planned triplet piping modifications would not increase the current triplet magnet vibrations and overwhelm the existing fast feedback control system. This paper aims to describe the current understanding of the root cause and kinematic of the RHIC triplet vibrations and offer mitigation options for EIC.

Please consider my poster for contributed oral presentation

No

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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