Contribution ID: **772** Type: **Contributed Oral Presentation**

Injection into resonance islands

Tuesday 3 June 2025 10:10 (20 minutes)

An Accelerator Physics Experiment (APEX) was conducted in the Relativistic Heavy Ion Collider (RHIC) to verify the formation, rotation, and size of resonance islands.The experiment provides lattice parameters to be used to facilitate an alternative method of transition crossing in the Hadron Storage Ring (HSR) of the Electron Ion Collider (EIC) project by producing a non-adiabatic kick to the off-axis beam within the island to displace the beam to the central closed orbit across transition. Proton beam was injected directly into an octupolar field driven stable resonance island in RHIC. This paper describes the procedures used to perform this Resonance Island Injection (RII) and discusses the experimental results.

Footnotes

Paper preparation format

LaTeX

Region represented

America

Funding Agency

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

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Session Classification: TUAD:Hadron Accelerators (Contributed)

Track Classification: MC4: Hadron Accelerators: MC4.A04 Circular Accelerators