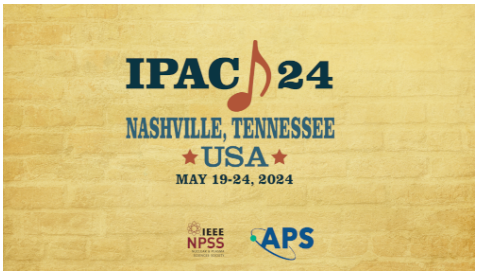

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Commissioning of extended electron beam ion source for Relativistic Heavy Ion Collider

Wednesday, 22 May 2024 11:50 (20 minutes)

The Extended Electron Beam Ion Source (EEBIS) was installed and commissioned for the Relativistic Heavy Ion Collider (RHIC), NASA Space Radiation Laboratory (NSRL), and future Electron Ion Collider (EIC) at Brookhaven National Laboratory (BNL). Within one month of completed installation, daily operation of multiple ion beams for Galactic Cosmic Ray (GCR) simulation for NSRL science was achieved. Concurrently, gold ion beam was developed at higher intensities and pulse rates in anticipation of RHIC operation. After demonstrating simultaneous operation of beams for both the RHIC and NSRL programs, machine learning algorithms were implemented to tune both the electrostatic beam transport lines and the dynamic voltages of the drift tube structure inside of EEBIS. The methods and results are presented and discussed.

Footnotes

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