Contribution ID: **55** Contribution code: **MOP038** Type: **Poster Presentation**

Fabrication Progress of an RF Beam Sweeper for Purifying Rare Isotope Beams

Monday 11 August 2025 16:00 (2 hours)

The RF beam sweeper at ATLAS facility plays a key role in the production of radioactive ion beams by enabling time-of-flight-based separation, thereby improving the purity of in-flight rare isotope beams. The current sweeper operates 6 MHz and achieves a maximum deflecting voltage of 55 kV. However, the enhanced beam capabilities introduced by the Argonne In-flight Ion separator (RAISOR) require a more versatile and higher-performance sweeper. To meet these needs, we are developing an upgraded RF sweeper capable of operating at 6 MHz and 12 MHz, with an improved deflecting voltage of 150 kV. The system employs a resonant circuit architecture incorporating electrode plates, an adjustable coil, and a mechanical sliding switch to facilitate frequency adjustment. In this talk, we will present design considerations and fabrication progress of the new RF sweeper, aimed at supporting next-generation rare isotope beam experiments.

Please consider my poster for contributed oral presentation

Yes

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

No

Footnotes

Funding Agency

- This work was supported by the U.S. Department of Energy, Office of Nuclear Physics, under SBIR grant DE-SC0019719.

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Yes

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Session Classification: Monday Poster Session

Track Classification: MC6 - Beam Instrumentation, Controls, AI/ML, and Operational Aspects