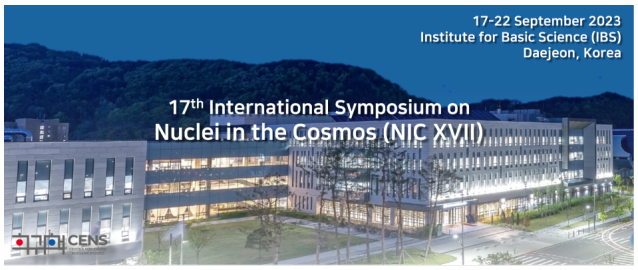

Contribution ID: **159** Type: **Poster**

Development and Status of the In-Flight Fragment Separator at RAON

Tuesday, 19 September 2023 17:15 (5 minutes)

The Rare isotope Accelerator complex for ON-line experiments (RAON) is a heavy ion accelerator facility that provides both stable and rare isotope (RI) beams for basic and applied science research. The in-flight fragment (IF) separator of RAON, the main device for producing RI beams, is under development. In order to efficiently produce RI beams by using in-flight fission of uranium beams as well as projectile fragmentation reactions, the IF separator is designed to have angular acceptance and momentum resolution of ±40 mrad and ±3%, respectively. The IF separator consists of a target, beam dump, magnets, and detector systems. The high-power target and beam dump for the 80 kW primary beam were fabricated using graphite. The IF magnet system consists of a total of 8 dipole magnets, 15 sets of quadrupole magnet triplet, 2 sextupole magnets, and power supply systems. Fabrication of all IF magnets have been completed and on-site installation is in progress. In addition, detectors for particle identification (PID) and data acquisition (DAQ) systems were installed at the focal planes of the IF separator. The development status of IF separator is briefly introduced.

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Session Classification: Poster session (New facilities, instruments and tools)

Track Classification: Others (new facilities, instruments, tools, etc)