EMIS 2022 at RAON



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Commissioning of the Advanced Rare Isotope Separator ARIS at FRIB

Tuesday, 4 October 2022 16:00 (30 minutes)

Commissioning of the in-flight separator system ARIS began in early 2022 at the Facility for Rare Isotope Beams (FRIB) at Michigan State University. The system consists of up to three stages of achromatic separation and can deliver beams to various experimental stations for nuclear and astrophysics studies, as well as other societal needs. In-flight products are generated with beams from a driver linac designed to deliver up to 400 kW of 200 MeV/u uranium ions on-target, and higher energies for lighter ions. The separator is nominally designed to transmit beams of phase space distribution widths up to 40 mrad and +/-5% for momentum. To enhance the transmission efficiency over various legacy beam lines, momentum compression can be imposed at the first degrader stage. Modes with no compression are also developed to avoid using a degrader in the preseparator. The first cycle of experiments began in March at about 1 kW of primary beam. Operation at higher power and beam energies has been progressing. A description of the system will be given along with results from commissioning and operational experience.

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Primary authors: Dr KWAN, Elaine (FRIB/MSU); FUKUSHIMA, Kei (Facility for Rare Isotope Beams, Michigan State University); PORTILLO, Mauricio (FRIB MSU/USA); Dr SMITH, Mallory (FRIB/MSU); HAUSMANN, Marc (FRIB / MSU); STEINER, Mathias (Facility for Rare Isotope Beams, Michigan State University); TARASOV, Oleg (FRIB / MSU); OSTROUMOV, Peter (FRIB / MSU); ZHANG, Tong (FRIB / MSU)

Presenter: PORTILLO, Mauricio (FRIB MSU/USA)

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