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Progress on beam dynamics studies for the ISRS isochronous ring spectrometer

Monday 2 June 2025 16:00 (2 hours)

A new lattice configuration is being developed for a compact,isochronous ring for the ISRS project, as an innovative spectrometer at HiE-ISOLDE. The design incorporates ten combined-function, canted cosine-theta (CCT) superconducting magnets, enabling the ring to fit within a constrained 5x5 meter hall space. This design presents significant challenges, particularly in accommodating the injection and extraction of a high beam rigidity beam, as the CCT magnets mechanical dimensions severely limit the space available for these subsystems. Using Bmad code simulations, the performance of beam injection and extraction, based on a high-field, superconducting septum and a fast magnetic kicker, is evaluated, along with the time-of-flight separation of various isotope ion products from selected nuclear reactions of interest.

Footnotes

Paper preparation format

Region represented

Europe

Funding Agency

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