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Beam dynamics challenge for multi-charge beam acceleration in FRIB

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Charge stripping is a highly beneficial technique in a heavy ion accelerator to improve acceleration efficiency. However, the beam after the stripping is distributed over several charge states, which leads to low stripping efficiency.

The driver linac of the Facility for Rare Isotope Beams (FRIB) at Michigan State University is designed to simultaneously accelerate multi-charge states of a heavy ion beam to overcome the low efficiency. For instance, the stripping efficiency is improved nearly four times by accelerating five charge states. In addition, two charge states acceleration to the stripper will be enabled by front-end upgrade.

In this presentation, beam dynamics for simultaneous multi-charge state beam acceleration in FRIB is discussed.

Footnotes

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Yes

Author: MARUTA, Tomofumi (Facility for Rare Isotope Beams)

Co-authors: FUKUSHIMA, Kei (Facility for Rare Isotope Beams); GONZALEZ, Alec (Facility for Rare Isotope Beams); HWANG, Kilean (Facility for Rare Isotope Beams); OSTROUMOV, Peter (Facility for Rare Isotope Beams); PLASTUN, Alexander (Facility for Rare Isotope Beams); ZHANG, Tong (Facility for Rare Isotope Beams); ZHAO, Qiang (Michigan State University)

Presenter: MARUTA, Tomofumi (Facility for Rare Isotope Beams)

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