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Ion Beam Distribution in the FNAL LEBT

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The Fermilab 750keV injector sends 25mA H⁻ beam for 30μs at a rep-rate of 15Hz. The beam transmission through the FNAL injector is currently less than 50% from the ion source to the entrance of the drift tube linac. Recently it was uncovered that the primary loss point is within the region prior to the RFQ which houses the solenoid focal elements that match the beam to the RFQ. With recent diagnostic measurements the beam profile was able to be obtained in the LEBT and began to shed light on beam size with the use of a scraper paddle. We will discuss beam emittance measurement in the LEBT and a mitigation plan to improve the transmission efficiency.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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