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LAMP Front-End RFQ optimization for micropulse production

Thursday 14 August 2025 16:00 (2 hours)

The LANSCE Modernization Project (LAMP) aims at upgrading the front end of the LANSCE accelerator, involving one single radio-frequency quadrupole (RFQ) at 201.25 MHz for simultaneously accelerating both proton (H+) and negative hydrogen ion (H-) beams from 100 keV to 3 MeV. To meet the diverse set of beam requirements at various user stations, the RFQ must be capable of accelerating a continuous-wave beam as well as a pulsed input beam. For example, with H- beam production, the RFQ accelerates a continuous-wave-like beam for the Lujan Center, and a pulsed beam for the Weapons Neutron Research (WNR) facility. The WNR operational mode is the highlight of the LANSCE accelerator and of the LAMP upgrade. We introduce the design optimization of the RFQ for ensuring that all associated requirements of the LAMP key performance parameters are satisfied. The optimization of the overall configuration of the low energy beam transport (LEBT) beamline for shaping the phase spaces of the WNR beam pulse at the entrance to the RFQ is also addressed.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

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I have read and accept the Privacy Policy Statement

Yes

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