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LANSCE Beam Transport Model Enhancement and Validation

Tuesday 12 August 2025 16:00 (2 hours)

At the Los Alamos Neutron Science Center (LANSCE), accurate beam transport modeling is essential to understand the nature of beam instabilities and losses. The model analysis enables significant improvement in beam transport tuning. It is the key element in ensuring the beam envelope remains constrained and that the bunch structure is preserved as it traverses the distance from the 800-MeV Linac to the target stations downstream. Historically, all the high-energy beamlines (HEBT) have been simulated using the TRANSPORT code. We are developing enhanced beamline models in modern accelerator physics codes such as MAD-X or Elegant, which enable more detailed particle tracking and include some space-charge effects. These models may help us better understand the beam parameters during transport to the targets. In this report, we present our simulation models and, where applicable, compare them with experimental beam diagnostics data.

Please consider my poster for contributed oral presentation

No

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

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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