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Traveling-wave chopper structures for LANSCE Modernization Project

Thursday 14 August 2025 16:00 (2 hours)

The Los Alamos Neutron Science Center (LANSCE) accelerator complex delivers both protons and negative hydrogen ions with various beam time patterns simultaneously to multiple users. The LANSCE linac front end is still based on Cockcroft-Walton voltage generators. An upgrade of the front end to a modern, RFQ-based version –a part of the LANSCE Modernization Project (LAMP) –is now in the conceptual design stage. The LAMP will need fast beam choppers both in the low-energy transport (LEBT, 100 keV) before RFQ, and in the medium-energy transport (MEBT, 3 MeV) after RFQ. We use CST modeling to develop fast traveling-wave current structures for LAMP MEBT and LEBT beam choppers. A few structure types: plate-coax helix, meander-folded stripline on high-dielectric-constant substrate, and double-helix –are considered and compared. The structures must provide short rise / fall times of the deflecting electric field (1-ns class in MEBT), while still making possible for the chopper pulse generators to deliver the required voltages at high repetition rates.

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

I have read and accept the Privacy Policy Statement

Yes

Author: KURENNOY, Sergey (Los Alamos National Laboratory)

Presenter: KURENNOY, Sergey (Los Alamos National Laboratory)

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