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Recent progress in laser wire based H- beam diagnostics at the SNS linac

Tuesday, 21 May 2024 16:00 (2 hours)

Laser wire has been used for nonintrusive profile and emittance measurements of operational hydrogen ion (H-) beam at the SNS linac. In this talk, we will describe the following recent developments in the laser wire system. 1) An upgraded light source and laser transport line which enables novel measurement capabilities including longitudinal profile measurement and high-energy proton beam extraction over potentially an entire macropulse. 2) A dual-detector emittance measurement scheme that boosted the dynamic range by an order of magnitude. 3) Design and implementation laser-wire-based nonintrusive longitudinal phase space measurement system.

Footnotes

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