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Advancements on bunch profile measurement of the operational H- beam at the SNS linac using laser wire

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A laser-wire-based method for a direct measurement of bunch profiles of an operational H- beam has been developed at the SNS. In this talk, we report recent advancements on the bunch profile measurements using a customized picosecond pulsed laser with giga-watt peak power and a user-defined macro-pulse structure. The modified system enables fast and precise tracking of the bunch profiles over both the longitudinal and transverse dimensions of the H- beam at different energy levels. The measurement results on the 1.7-MW neutron production beam at the completion of the recent Proton Power Upgrade (PPU) project will be described.

Footnotes

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