Contribution ID: **417** Type: **Poster Presentation**

Enhanced techniques for transverse beam profile measurement by two-slit interference at ILSF

Tuesday 9 September 2025 16:00 (2 hours)

We propose an innovative method for measuring beam profiles at the Iranian Light Source Facility (ILSF) Synchrotron, which produces 3 GeV electron bunches. In this new generation of synchrotrons, short bunches require more precise detection techniques. The X-rays generated by dipole sources provide sufficient resolution for accurate diagnostics of the beam profile. This study explores the application of both 2-slit and 4-slit interference techniques to analyze the transverse profiles of particle bunches using the generated X-rays. Simulations are carried out using OASYS, with parameters carefully optimized to enhance measurement accuracy.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

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Session Classification: TUP

Track Classification: MC04: Transverse Profile and Emittance Monitors