



Contribution ID: 1283 Contribution code: THPL110

Type: **Poster Presentation**

A consecutive double-slit emittance meter for high-brightness electron source

Thursday, 11 May 2023 16:30 (2 hours)

High-brightness photoinjector has been an indispensable electron source driving X-ray free electron lasers (FEL). To improve the performance of the next-generation FEL, a high-quality electron beam with a small emittance, e.g. 0.1 micrometers for 100 pC bunch charge, will be of vital importance. A consecutive double-slit emittance meter has been proposed to measure such a small-emittance beam accurately. Analytical evaluations have been performed based upon the beam parameters of a C-band photocathode RF gun being constructed in the China Spallation Neutron Source.

Funding Agency

Footnotes

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Yes

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Session Classification: Thursday Poster Session

Track Classification: MC6: Beam Instrumentation, Controls, Feedback and Operational Aspects: MC6.T03: Beam Diagnostics and Instrumentation