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

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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.

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Footnotes

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Yes

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