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Magnetic field measurements and radiation simulation for a superconducting transverse-gradient undulator

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The transverse gradient undulator (TGU) concept is a way to enable short-gain length free electron lasers with laser-plasma accelerated electron bunches, although their energy spread is typically in the percent range. In this contribution, we report on the magnetic field measurements on a 40-period superconducting TGU designed, manufactured and commissioned at the Karlsruhe Institute of Technology (KIT). As the figure of merit for the field quality, tracking and radiation field simulations, based on the measured fields, will be presented.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

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