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UED/UEM conduction-cooled Nb3Sn SRF photogun commissioning results

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SRF photoguns become a promising candidate to produce highly stable electrons for UEM/UED applications because of the ultrahigh shot-to-shot stability compared to room temperature RF photoguns. SRF technology was prohibitively expensive for industrial use until two recent advancements: Nb3Sn and conduction cooling. SRF gun can provide a CW operation capability while consuming only 2W of RF power which eliminates the need of an expensive high power RF system and saves a facility footprint.
Euclid is developing a continuous wave (CW), 1.5-cell, MeV-scale SRF conduction cooled photogun operating at 1.3 GHz. In this paper, we present commissioning results of the gun in the newly developed conduction cooled cryomodule with beamline integration.

Footnotes

Paper preparation format

Word

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America

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