Contribution ID: **42** Contribution code: **MOZN02** Type: **Invited Oral Presentation**

Bright bunch generation in a short pulse high gradient RF gun operating in the transient regime

Monday 11 August 2025 14:30 (30 minutes)

Normal-conducting accelerating structures capable of supporting GV/m-scale electric fields offer a promising pathway to compact accelerators. Similarly, achieving such high fields in photocathode guns is critical for the generation of bright electron bunches. Our group has demonstrated the generation of ˜0.4 GV/m electric fields on a photocathode surface in an X-band (11.7 GHz) photoemission gun (Xgun) powered by short RF pulses (˜9 ns). In this work, we investigate the RF characteristics and beam dynamics evolution in the transient field regime. Accurately accounting for the transient nature of the RF field is essential for optimizing the beam dynamics and ensuring the production of high-quality electron bunches.

Please consider my poster for contributed oral presentation

Yes

Would you like to submit this poster in student poster session on Sunday (August 10th)

No

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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