Contribution ID: **62** Contribution code: **WEP073** Type: **Poster Presentation**

Progress updates on Compressed Ultrashort Pulse Injector Demonstrator

Wednesday 13 August 2025 16:00 (2 hours)

High gradient photoinjector is an important tool to generate high brightness electron beams for scientific applications. Since then, research and development of high accelerating gradient photoinjectors has been an important topic to generate even brighter electron beams. However, high gradient photoinjectors suffer issues from material breakdown due to extremely high surface electric fields. Recently, the Argonne Wakefield Accelerator (AWA) facility commissioned an X-band photoinjector at 400 MV/m cathode field fed with nanoseconds rf pulses from a wakefield accelerator without significant breakdown rates. Here we propose to develop an X-band photoinjector which can utilize ultrashort rf pulses generated by klytrons and pulse compressors to produce surface fields at 500 MV/m or higher at the cathode. This presentation focusses on the electromagnetics and mechanical designs of the X-band photoinjector, and preliminary beam dynamics simulation studies.

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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