Contribution ID: **363** Contribution code: **TUP047** Type: **Poster Presentation**

Generation of electron beam current spike for short pulse generation with two lasers

Tuesday 12 August 2025 16:00 (2 hours)

Formation of current spike in electron bunch has direct implication for attosecond pulse generation in XFEL. In this paper, we present start-to-end simulation for tunable, short current spike generation in the LCLS copper linac using photocathode laser shaping. Our approach uses two stacked laser pulses—a long and a short pulse —to imprint a small modulation in the electron bunch as it is created in the injector. This initial modulation is then amplified as the bunch travels through the downstream bunch compressors, ultimately forming a sharp current spike. We also discuss how different shapes of the initial laser pulses influence the final current profile and the efficiency of spike generation.

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No

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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