Contribution ID: **17** Type: **Poster (including Speed Talk)**

Optimizing EuXFEL Photoinjector Performance via Laser Shaping Approach

Friday 27 June 2025 10:20 (3 minutes)

The OPAL-FEL project aims to advance European XFEL capabilities for lasing in the sub angstrom regime through the generation of low-emittance electron beams. Within OPAL-FEL, we have applied a combined spatial and temporal driver laser shaping technique to optimize photoinjector emittance. Beam dynamics simulations are performed to demonstrate that the applied approach significantly reduces electron beam emittance. Preliminary experimental results have shown reasonably good SASE performance using shaped electron bunches. Both numerical and experimental results will be shown.

Summary

Primary author: CAI, Meng (MXL (XFEL))

Presenter: CAI, Meng (MXL (XFEL))

Session Classification: Beam Dynamics

Track Classification: Beam dynamics