Contribution ID: **2007** Contribution code: **TUPM086** Type: **Poster Presentation**

Simulation study of beam-driven plasma wakefield experiments on CLARA

Tuesday 3 June 2025 16:00 (2 hours)

The Compact Linear Accelerator for Research and Applications (CLARA) is an electron test facility capable of delivering tunable 250 MeV electron beams with up to 250 pC charge to the Full Energy Beam Exploitation (FEBE) experimental area . In this study, we investigate the feasibility of conducting beam-driven plasma wakefield acceleration (PWFA) experiments using the CLARA beam and experimental area. We present simulations of various potential experiments, considering the baseline and R&D beam parameters expected to be delivered to the FEBE experimental chambers*. Our findings highlight the potential for CLARA to support advanced PWFA research, with detailed analysis of beam dynamics and experimental configurations.

Footnotes

*Snedden, E. W., et al. "Specification and design for full energy beam exploitation of the compact linear accelerator for research and applications." Physical Review Accelerators and Beams 27.4 (2024): 041602.

Paper preparation format

LaTeX

Region represented

Europe

Funding Agency

Author: OVERTON, Toby (Science and Technology Facilities Council)

Co-author: PACEY, Thomas (Science and Technology Facilities Council)

Presenter: OVERTON, Toby (Science and Technology Facilities Council)

Session Classification: Tuesday Poster Session

Track Classification: MC3: Novel Particle Sources and Acceleration Techniques: MC3.A22 Plasma Wakefield Acceleration