Contribution ID: **531** Contribution code: **SUP023** Type: **Poster Presentation**

Flat beam PWFA theory and experiment at AWA

Sunday 10 August 2025 15:00 (3 hours)

A wakefield experiment at the Argonne Wakefield Accelerator (AWA) facility utilizes flat electron beams with highly asymmetric transverse emittances to drive plasma wakefields in the underdense regime. These beams create elliptical blowout structures, producing asymmetric transverse focusing forces. The experiment utilizes a compact 4-cm-long capillary discharge plasma source developed at UCLA. Analytic models of blowout ellipticity and matching conditions, supported by particle-in-cell simulations, guide the experiment's design. Engineering preparations including the use of windows for vacuum-gas separation, beam transport and diagnostics are discussed along with the first beam runs which involve flat beam generation and transport. The theory of flat beam plasma wakefield interaction will also be discussed

Please consider my poster for contributed oral presentation

Yes

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

Yes

Footnotes

Funding Agency

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I have read and accept the Privacy Policy Statement

Yes

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Session Classification: SUP: Sunday Student Poster Session

Track Classification: MC3 - Novel Particle Sources, Acceleration Techniques, and their Applications