



Contribution ID: 1806 Contribution code: TUPA111

Type: **Poster Presentation**

Plasma wakefields produced by transversely asymmetric beams

Tuesday, 9 May 2023 16:30 (2 hours)

Particle beams with highly asymmetric emittance ratios are employed at accelerator facilities and are expected at the interaction point of high energy colliders. These asymmetric beams can be used to drive high gradient wakefields in plasmas. In plasma, the high aspect ratio of the drive beam can create a transversely elliptical blowout cavity and the asymmetry in the ion column creates asymmetric focusing in the two transverse planes. The ellipticity of the blowout depends on the ellipticity and normalized charge density of the beam. Simulations are performed to investigate the ellipticity of the wakefield based on the initial driver beam parameters and the corresponding beam transport is discussed.

Funding Agency

This work was performed with support of the US Dept. of Energy, Division of High Energy Physics, under contract no. DE-SC0017648

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: MANWANI, Pratik (University of California, Los Angeles)

Co-authors: CHOW, Derek (Particle Beam Physics Lab (PBPL)); ANDONIAN, Gerard (University of California, Los Angeles); ROSENZWEIG, James (University of California, Los Angeles); MANN, Joshua (University of California, Los Angeles); MAJERNIK, Nathan (University of California, Los Angeles); KANG, Yunbo (Particle Beam Physics Lab (PBPL))

Presenter: MANWANI, Pratik (University of California, Los Angeles)

Session Classification: Tuesday Poster Session

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