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Passive plasma lens experiments at FACET-II

Wednesday 13 August 2025 16:00 (2 hours)

The beam-driven, passive plasma lens can provide axisymmetric focusing with strengths orders of magnitude greater than conventional quadrupole magnets, while remaining ultra-compact. These characteristics make it attractive for beam matching into a plasma wakefield accelerator and for controlling beam divergence downstream of plasma stages. Optimal performance can be achieved in the underdense regime, resulting in a linear focusing force and emittance preservation of the focused beam. We report progress on experimental results from SLAC's FACET-II facility, where we utilized a fs Ti:Sapphire laser pulse to ionize hydrogen gas from a supersonic gas jet to focus several hundred pCs of charge of a 10 GeV electron beam.

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

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I have read and accept the Privacy Policy Statement

Yes

Author: Mr MENG, Shutang (University of Colorado Boulder)

Co-authors: ADLI, Erik (University of Oslo); ARINIELLO, Robert (SLAC National Accelerator Laboratory); Dr CAO, Gevy Jiawei (University of Oslo); CORDE, Sebastien (Laboratoire d'Optique Appliquée); Dr DOSS, Christopher (Lawrence Berkeley National Laboratory); DALICHAOUCH, Thamine (University of California, Los Angeles); EMMA, Claudio (SLAC National Accelerator Laboratory); GESSNER, Spencer (SLAC National Accelerator Laboratory); HANSEL, Claire (University of Colorado Boulder); HOGAN, Mark (SLAC National Accelerator Laboratory); JOSHI, Chan (University of California, Los Angeles); KNETSCH, Alexander (Laboratoire d'Optique

Appliquée); LEE, Valentina (University of Colorado Boulder); LITOS, Michael (University of Colorado Boulder); MAJERNIK, Nathan (SLAC National Accelerator Laboratory); MARSH, Kenneth (University of California, Los Angeles); O'SHEA, Brendan (SLAC National Accelerator Laboratory); ROS, Elena (Arizona State University); STOREY, Douglas (SLAC National Accelerator Laboratory); ZHANG, Chaojie (University of California, Los Angeles)

Presenter: Mr MENG, Shutang (University of Colorado Boulder)

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