



Contribution ID: 196

Type: poster

Peaked transverse ion spectra from picosecond pulses interacting with underdense targets

Monday, 25 September 2017 19:30 (1 hour)

We will discuss OMEGA EP experiments of the interaction of a relativistic intensity, picosecond-duration laser pulse with an underdense plasma. A 1200 J, 2.5 ns pulse heated a plastic (or deuterated plastic) target to create an underdense plasma plume target. The ponderomotive force of the laser forms a channel through the plasma. Filamentation of the laser, and therefore filamentation of the created channel, have been observed both with proton and optical probing. High-energy electron beams have been measured along the laser axis, with energies exceeding 400 MeV. Peaked structures were observed in the transverse ion spectra. Two-dimensional particle-in-cell simulations are used to investigate the interaction. In particular, to look for evidence of the peaked ion spectra and the origin of the structures.

Primary author: Dr WILLINGALE, Louise (University of Michigan)

Co-authors: Ms HUSSEIN, A (University of Michigan); Dr AREFIEV, A V (University of Texas, Austin); Dr STOECKL, C (LLE); Dr ZULICK, C (NRL); Dr CHEN, H (LLNL); Dr COBBLE, J (LANL); Prof. KRUSHELNICK, K (University of Michigan); Mr KORDELL, P (University of Michigan); Dr NILSON, PM (LLE); SANGSTER, TC (LLE)

Presenter: Dr WILLINGALE, Louise (University of Michigan)

Session Classification: Wine and Poster Session 1(WG1-WG2-WG3-WG8)

Track Classification: WG2 - Ion Beams from Plasmas