

Abstract Submitted
for the DPP12 Meeting of
The American Physical Society

Effects of asymmetric laser pulses in particle trapping and dephasing in the laser wakefield electron acceleration MYUNG-HOON CHO, MIN SUP HUR, UNIST — Electron acceleration in the plasma wakefield driven by asymmetric laser pulse is investigated with 2D PIC simulation. There exists an optimum length of the rising and falling time of the laser pulse for different plasma densities. In particular, for a fixed rising segments of the laser pulse, it is found that the particle trapping is influenced by the tail of the laser field. Furthermore different rising times of the pulse makes different range of the wakefield in which the particles are trapped. Consequently both rising and tail parts of the laser pulse influences the particle trapping yield in different ways. The trapping efficiency is shown as a function of the pulse shape along with particle trajectories from PIC simulations. In addition to that, effects of the pulse rising time on the dephasing is discussed.

Min Sup Hur
UNIST

Date submitted: 18 Jul 2012

Electronic form version 1.4