Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Generation of nonadiabatic laser pulse front from an overdense plasma MIN SUP HUR, VICTOR KULAGIN, KERI, HAE JUNE LEE, Pusan National University, JAEHOON KIM, HYYONG SUK, KERI — We suggest utilizing the interaction of an overdense plasma and an ultraintense laser pulse to generate extremely sharp (nonadiabatic) ramping-up of the pulse front. Due to the relativistic mass increase, the overdense plasma becomes partially transparent. As the boundary between the transparent and opaque region moves with a slow velocity, the laser pulse keeps being reflected by the boundary. After propagating through a couple of microns, the initial Gaussian pulse shape results in half-Gaussian shape. The different characteristics between the linear and circularly polarized pulse are discussed.

Min Sup Hur
KERI

Date submitted: 19 Jul 2007 Electronic form version 1.4