

Abstract Submitted
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Hot electron generation during ICF target compression CHUANG REN, GANG LI, VALERI GONCHAROV, LLE, University of Rochester — Yield degradation in ICF experiments is commonly attributed to hydrodynamic instabilities developed during shell implosion.. Preheating of the fuel shell due to the hot electrons generated by the drive laser could be a potential source of an additional yield reduction. A PIC code OSIRIS is used to simulate the laser-plasma interactions and hot electron generation in two- dimensional space. For a typical run, the laser intensity is $3 \times 10^{15} W/cm^2$ ($\lambda = 0.353\mu m$) with a spot size of $3.4 \mu m$. The density profile, taken from the simulations using hydrocode LILAC, changes from 0 to $0.3 n_c$ in $300 \mu m$. The simulation box is $300 \mu m$ in x direction and $12 \mu m$ in y direction and the simulation time is up to 1.5 ps. Parametric instabilities such as Raman scattering and two-plasmon decay will be studied. Laser absorption and electron energy spectra in this regime will be presented.

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