

Abstract Submitted
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PIC simulations of energetic electron generation from laser-plasma interactions¹ RUI YAN, GANG LI, CHUANG REN, University of Rochester — Energetic electron generation from laser-plasma interactions is important to inertial confinement fusion in many ways. Using particle-in-cell (PIC) simulations we study the energetic electrons generation from Raman/two-plasmon-decay instabilities near the 1/4-critical surface. The possibility of target preheating from these electrons will be examined for the Omega laser parameters. We also study the energetic electron generation in the parameter regime relevant to fast ignition. Both 2D and 3D simulations are carried out to study different electron acceleration mechanisms near the laser-plasma interface between linearly-polarized and circularly-polarized lasers. Energetic electron conversion efficiency and angular spread will be compared for the two polarizations.

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