Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Numerical Investigation of the Effect of Two-Plasmon-Decay Electron Preheat in Planar Rayleigh–Taylor Experiments J.A. DELETTREZ, S.X. HU, A. SHVYDKY, Laboratory for Laser Energetics, U. of Rochester — Planar Rayleigh–Taylor (RT) experiments carried out at laser intensities near 10^{15} W/cm^2 showed RT growth suppression for the 20-μm-wavelength mode but not for longer wavelength modes.[1] This RT growth stabilization was attributed mainly to the nonlocal transport of coronal electrons with only minor estimated preheat from two-plasmon-decay (TPD) electrons. Simulations have been performed with the 2-D hydrodynamics code *DRACO* in which the TPD electrons' preheat is modeled with a straight-line transport package. The effect of the TPD electron preheat on the RT amplitudes for 20-, 30- and 60-μm wavelengths are presented for intensities 5×10^{14} and 10^{15} W/cm^2. Comparisons with experiments will elucidate the role of TPD electron preheat to the RT-stabilization mechanism. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

[1]V. A. Smalyuk *et al.*, Phys. Rev. Lett. **101**, 025002 (2008).

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Date submitted: 07 Jul 2010 Electronic form version 1.4