

Abstract Submitted
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Electron kinetic simulations of the interaction a picket-fence laser pulse with a solid target JEAN-PIERRE MATTE, INRS-EMT (Un. du Québec), Varennes, Qc, JACQUES A. DELETTREZ, Laboratory for Laser Energetics, U. of Rochester — Recent experiments with the OMEGA laser at LLE [1], with picket fence pulses, have indicated higher absorption than expected (on the basis of hydrodynamic simulations performed with the fluid code LILAC) during the first picket. As this raises the issue of heat transport, we have performed a series of electron kinetic simulations with our electron kinetic code “FPI” [2,3], which includes advection, an ambipolar electric field to ensure quasi-neutrality, electron-ion and electron-electron collisions represented with a Fokker-Planck collision term, atomic physics, and fluid ion hydrodynamics. It appears that the very steep density gradients that exist in these conditions enhance the electron heat flow.

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[2] J.P. Matte, T.W. Johnston, J. Delettrez and R.L. McCrory, Phys. Rev. Lett. 53, 1461 (1984).

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