

Abstract Submitted
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Generation of fast electrons and electron transport in fast ignition plasma¹ J. TONGE, M. TZOUFRAS, F.S. TSUNG, W.B. MORI, UCLA, C. REN, University of Rochester — The characteristics of fast electron generation by the laser ignition pulse at the critical density layer of the target plasma and the transport of these electrons to a fast ignition target core are questions which bear on the viability of the fast ignitor concept. Results of 2.5D massively parallel full PIC simulations of scale Fast Ignitor targets (half size) and Fast Ignitor relevant plasmas are presented. With these simulations we explore mechanisms for fast electron generation by the ignition pulse and electron transport to the core. We also look at the effect of electron current termination at the core on the fast electron generation and transport. This determines whether the problem of fast ignition can be broken up into parts (fast electron generation, transport, and energy deposition at the core) for simulation or the problem must be treated as a whole.

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