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Transport of Energetic Electrons Produced from Two-Plasmon Decay in the 1-D Hydrodynamic Code *LILAC* J.A. DELETTREZ, V.N. GOCHAROV, P.B. RADHA, C. STOECKL, A.V. MAXIMOV, T.C. SANGSTER, Laboratory for Laser Energetics, U. of Rochester, J.A. FRENJE, PSFC, MIT, D. SHVARTS, NCRN — The effect of two-plasmon-decay electrons on direct-drive cryogenic implosions on the OMEGA laser is modeled. The electrons are created at the quarter-critical surface when a threshold depending on laser intensity and local thermal-electron conditions is attained. The fraction of the absorbed laser energy is a parameter that depends exponentially on the threshold condition and saturates at laser intensities of 10^{15} W/cm^2. The source distribution is a Maxwellian with a temperature scaling inferred from hard x-ray measurements. The electrons are transported with a multi-group diffusion model for the low energy electrons and a straight-line model for the high-energy electrons. Simulation results from warm plastic and cryogenic implosions are compared with the following diagnostics: the hard x-ray emission, the fast-ion spectrum, and the neutron-averaged areal density at stagnation. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-08NA28302.

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