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Hydrodynamic Simulations of Integrated Experiments Planned for OMEGA/OMEGA EP Laser Systems J.A. DELETTREZ, J. MYATT, P.B. RADHA, C. STOECKL, D.D. MEYERHOFER, Laboratory for Laser Energetics, U. of Rochester — Integrated fast-ignition experiments for the combined OMEGA/OMEGA EP Laser Systems have been simulated with the multidimensional hydrodynamic code *DRACO*. The straight-line electron transport model includes energy loss due to collisions and to electric fields due to return currents. Simulations of an OMEGA cryogenic DT target designed to reach a 1-D fuel ρR of 500 mg/cm^2 have been carried out in 2-D (with and without perturbations) to assess the sensitivity to energy, timing, and irradiance of the fast-ignitor (FI) beam. The neutron yields from integrated experiments are predicted to be in excess of 10^{15} (compared to $\sim 10^{14}$ for no ignitor beam) over a timing range of approximately 80 ps, using a 2.6-kJ FI beam and 50% conversion into electrons. This talk will present new results of 2-D simulations that include the improvements in the transport model and the effects of target perturbations on the compressed core. This work was supported by the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC52-92SF19460.

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