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The Equation-of-State Dependence of Nonuniformity Growth in Cryogenic-DT Implosions on OMEGA S.X. HU, V.N. GONCHAROV, T.R. BOEHLY, S. SKUPSKY, T.C. SANGSTER, D.D. MEYERHOFER, R.L. MCCRORY, Laboratory for Laser Energetics, U. of Rochester — This work reports on the analysis of low-adiabat, cryogenic deuterium–tritium (DT), high-compression implosion experiments[1] performed on OMEGA using 2-D *DRACO* simulations.[2] The growth of various target and laser perturbations has been investigated using 2-D radiation-hydrodynamic simulations with different fuel equation-of-states (EOS) such as the *SESAME*-EOS, the Thomas–Fermi model, as well as the FPEOS table[3] recently created by the path-integral Monte Carlo method. It has been shown that uniform 1-D hydro simulations using the FPEOS table predicted ∼20% lower neutron yield than the *SESAME*-EOS case.[3] In this work, we will present the dependence of RT growth and neutron-yield reduction on these different equation of states from 2-D hydro simulations. 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. N. Goncharov *et al.*, Phys. Rev. Lett. **104**, 165001 (2010).
[2]S. X. Hu *et al.*, "Two-Dimensional Simulations of the Neutron-Yield in Cryogenic-DT Implosions on OMEGA," submitted to Phys. Plasmas.
[3]S. X. Hu *et al.*, Phys. Rev. Lett. **104**, 235003 (2010).

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