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Three-Dimensional Modeling of Low-Mode Asymmetries in OMEGA Cryogenic Implosions K.S. ANDERSON, Laboratory for Laser Energetics, Univ. of Rochester, P.W. MCKENTY, Laboratory for Laser Energetics, U. of Rochester, A. SHVYDKY, T.J.B. COLLINS, Laboratory for Laser Energetics, Univ. of Rochester, C.J. FORREST, Laboratory for Laser Energetics, U. of Rochester, J.P. KNAUER, Laboratory for Laser Energetics, Univ. of Rochester, J.A. MAROZAS, Laboratory for Laser Energetics, U. of Rochester, F.J. MARSHALL, P.B. RADHA, A.B. SEFKOW, Laboratory for Laser Energetics, Univ. of Rochester, M.M. MARINAK, LLNL — In direct-drive inertial confinement fusion implosions, long-wavelength asymmetries resulting from target offset, laser power imbalance, beam mispointing, etc. can be highly detrimental to target performance. Characterizing the effects of these asymmetry sources requires 3-D simulations performed in full-sphere geometry to accurately capture the evolution of shell perturbations and hot-spot flow. This paper will present 3-D *HYDRA*[1] simulations characterizing the impact of these perturbation sources on yield and shell modulation. Various simulated observables are generated, and trends are analyzed and compared with experimental data. This material is based on work supported by the Department of Energy National Nuclear Security Administration under Award Numbers DE-NA0001944 and performed under the auspices of the LLNL under Contract No. DE-AC52-07NA27344.

[1]M. M. Marinak *et al.*, Phys. Plasmas **8**, 2275 (2001).

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