

Abstract Submitted
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Multimode simulations of indirectly-driven high-convergence plastic capsules on Omega¹ PETER AMENDT, LLNL — An extensive Omega database of indirect-drive implosions with Ge-doped CH ablators and deuterium (DD) fuel has been developed over the past several years. Previously, nominally smooth capsules with fuel pressures from 5 to 50 atm were successfully analyzed [1] using the weakly nonlinear Haan saturation model. More recently, high-convergence (10 atm DD) targets were fielded with intentionally roughened ablators to test our modeling tools in a more nonlinear regime. Improved hohlraum modeling to accommodate the measured ($\approx 2x$) enhancement (relative to nominal XSN opacity modeling) in gold M-band (2-5 keV) preheat and the use of thin walls (≈ 2 micron) for non-perturbative diagnosis of core symmetry is implemented. A frequency-dependent source is then extracted to drive separate capsule-only simulations with HYDRA [2] in 2-D. Results of multimode simulations spanning RMS capsule roughness from 10-350 nm are presented and compared with data.

[1] P. Amendt, R.E. Turner, and O.L. Landen, PRL 89, 165001 (2002).

[2] M. Marinak *et al.*, PoP 8, 2275 (2001).

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