Abstract Submitted
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Mixing at the Fuel–Ablator Interface in Backlit OMEGA Cryogenic Implosions T. J. B. COLLINS[1], C. STOECKL, R. EPSTEIN, S. C. MILLER, K. S. ANDERSON, D. CAO, C. J. FORREST, V. N. GONCHAROV, D. W. JACOBS-PERKINS, T. Z. KOSC, O. M. MANNION, J. A. MAROZAS, S. F. B. MORSE, S. P. REGAN, P. B. RADHA, T. C. SANGSTER, University of Rochester, M. GATU JOHNSON, J. A. FRENJE, R. D. PETRASSO, Massachusetts Institute of Technology — OMEGA cryogenic target implosions show a performance boundary correlated with acceleration-phase shell stability. Direct evidence that this is caused by Rayleigh−Taylor fuel–ablator mixing was previously obtained using a backlighter driven by a short pulse generated by OMEGA EP. The radiographic shadow cast by the shell shortly prior to stagnation shows significantly more absorption than post-processed clean simulations predict, evidence of ablator–fuel mix for an unstable implosion (α ˜ 1.9, IFAR = 14). We show comparison of synthetic radiographs from *DRACO* simulations investigating imprint and other mechanisms such as isolated surface perturbations and uncertainties in the mass ablation rate for reproducing experimental signatures of mix. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0003856.

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