Abstract Submitted for the DPP10 Meeting of The American Physical Society

Modeling capsule performance on the National Ignition Facility¹ S.V. WEBER, M.J. EDWARDS, S.W. HAAN, J.A. KOCH, J.L. MILOVICH, P.T. SPRINGER, LLNL, G. KYRALA, D.C. WILSON, LANL — Experiments on the National Ignition Facility (NIF) in September-December, 2009, and resuming in 2010, employed gas-filled symmetry capsules (SymCaps). These capsules were hydrodynamic surrogates of the ignition design, which has a layer of DT ice. While the main purpose of these capsules was to facilitate tuning of implosion symmetry, they also provide a significant set of capsule performance data. We examined a subset of experiments which gave nearly round core images and found systematic deviations of measurements from nominal modeling. Exploration of known uncertainties suggested than mix arising from isolated defects on the capsule outer surface best matched performance systematics. Upcoming experiments have been designed to test this hypothesis.

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