Abstract Submitted for the DPP14 Meeting of The American Physical Society

Fuel Cavity Asymmetry at the Onset of Deceleration in ICF RAHUL C. SHAH, F.J. WYSOCKI, LANL, V. GLEBOV, Univ. of Rochester, LLE, P. HAKEL, LANL, T. JOSHI, Univ. of Nevada, Reno, G. KAGAN, LANL, R.C. MANCINI, Univ. of Nevada, Reno, T.J. MURPHY, LANL, C. STOECKL, B. YAAKOBI, Univ. of Rochester, LLE, J.F. BENAGE, SNL — In ICF, the impact on symmetry of low mode drive non-uniformity is amplified by high convergence. Measurements have shown low mode areal density variation [1], however, direct impact of low modes on fuel volume has remained undemonstrated. We suggest our images provide first evidence of symmetry loss at the fuel-shell interface. The experiments use direct-drive spherical implosions (Omega). The inner 100 nm layer of the plastic shell is doped with diagnostic Ti to obtain information about interface position, temperature and density. Measurement is made at onset of deceleration at which time nuclear yield rate (NTD) and time resolved (SSCA) spectrum both are in agreement with 1-D prediction. Spectrally resolved images are obtained using the Multiple Monochromatic Imager, which combines a pinhole array with x-ray dispersive mirror and gated detector [2]. Angle averaging of the limb-brightened image data also shows agreement with the 1D calculation. However, the 2D image shows $\sim 20\%$ brightness variations over modes 2-10. These modulations are discussed in context of predicted variations of interface position.

[1] C.K. Li *et.al.* PRL **92**: 205001 (2004).

[2] T.Nagayama et.al. J. Appl. Phys. 109: 093303 (2011).

Rahul C. Shah LANL

Date submitted: 10 Jul 2014

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