

Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Measurement of inflight shell areal density perturbations in NIF capsule implosions near peak velocity¹ B.A. HAMMEL, L. PICKWORTH, V. SMALYUK, A. MACPHEE, H.A. SCOTT, H. ROBEY, M. BARRIOS, Lawrence Livermore National Laboratory, S.P. REGAN, University of Rochester, Laboratory for Laser Energetics — Quantitative measurements of shell-RhoR perturbations in capsules near peak implosion velocity (PV) are challenging. An external backlighter samples both sides of the shell, unless a re-entrant cone is used (potentially perturbing implosion). Emission from the hot core, after shock-stagnation and prior to PV, has been used as a self-backlighter, providing a means to sample one side of the capsule. Adding high-Z gas ($\sim 1\%$ Ar) to the capsule fill in Symcaps (^4He), has produced a continuum backlighter with significant increase in emission at photon energies ~ 8 keV over nominal fills. From images of the transmitted self-emission, above and below the K-edge of an internally doped Cu layer, we infer the growth at PV of imposed perturbations (100 nm amplitude, mode 40).

¹Prepared by LLNL under Contract DE-AC52-07NA27344.

Bruce Hammel
Lawrence Livermore National Laboratory

Date submitted: 22 Jul 2015

Electronic form version 1.4