

Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

RHO-R Measurements with the Neutron Imaging System at NIF NEVZAT GULER, GERARD JUNGMAN, GARY GRIM, FRANK MERRILL, GEORGE MORGAN, DOUGLAS WILSON, STEVEN BATHA, CHRIS DANLY, PETR VOLEGOV, CARL WILDE, MARK WILKE, LANL, DAVID FITTINGHOFF, LLNL — The first ever downscattered neutron images from ICF capsules were collected at NIF experiments by the neutron imaging system. The downscattered neutrons provide crucial information about the cold fuel areal density surrounding the hot fusion core. Analytical calculations together with simulations are used to estimate the areal density, rho-R, from the downscattered neutron intensities. We will present reconstructed intensity profiles of the hot fusion core and the cold fuel region surrounding it for three cryogenic DT implosions from Jun 2011, as well as the inferred areal densities from the analytical approach. This work was performed for the U.S. Department of Energy, National Nuclear Security Administration by the National Ignition Campaign partners. Prepared by LANL under Contract DE-AC-52-06-NA25396. Prepared by LLNL under Contract DE-AC52-07NA27344.

Nevzat Guler
LANL

Date submitted: 25 Jul 2011

Electronic form version 1.4