

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Observed Variations in Areal Densities as Measured by Detectors Along Multiple Lines of Sight Z. L. MOHAMED, C. J. FORREST, J. P. KNAUER, Laboratory for Laser Energetics, U. of Rochester, R. SIMPSON, M. GATU JOHNSON, PSFC, MIT — The neutron energy spectrum generated from cryogenic deuterium–tritium inertial confinement fusion experiments is used to interpret the cold-fuel distribution at peak compression. The spatial distribution of areal density is indicative of the symmetry of the implosion, which affects the final particle yield and hydrodynamic parameters of an experiment. Various particle detectors can be used to diagnose the areal density along a given line of sight. For a more complete view of an implosion’s areal density distribution, it is necessary to deploy detectors along different lines of sight. This work will show areal densities from recent cryogenic implosions as measured along several lines of sight in relation to the OMEGA laser target chamber. Measurements from a neutron detector that has been deployed along a newly constructed line of sight are included. This new detector allows for measurements of a previously unviewed region of the shell. This material is based upon work supported by the Department of Energy National Nuclear Security Administration under Award Number DE-NA0003856.

Z. L. Mohamed
Laboratory for Laser Energetics, U. of Rochester

Date submitted: 02 Jul 2019

Electronic form version 1.4