Abstract Submitted
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Shell and CORE Symmetry of beryllium capsule implosions at the National Ignition Facility GEORGE KYRALA, J. KLINE, S. YI, A. SIMAKOV, R. OLSON, D. WILSON, T. PERRY, S. BATHA, LANL, E. DEWALD, R. TOMMASINI, J. RALPH, D. STROZZI, M. SCHNEIDER, A. MACPHEE, LLNL, D. CALLAHAN, Lawrence Livermore National Laboartory, O. HURRICANE, J. MILOVICH, D. HINNKEL, S. KHAN, J. RYGG, T. MA, N. IZUMI, LLNL, A. ZYLSTRA, H. RINDERKNECHT, H. SIO, M.I.T. — We will present results of the Be experimental campaign on the implosion symmetry properties of Be capsules at the National Ignition Facility. The experiments measured the inflight and core implosion symmetry. Images of the x-ray emission from the core around bang time provide a measure the symmetry near peak compression [1]. Inflight symmetry of the ablator before stagnation is measured using a backlight imaging [2] techniques. A Cu backlighter was used to measure the transmissions of the Cu doped Be shells. 2D symmetry is used to infer the drive and velocity uniformity and help adjust the time dependent ratio of the inner to the outer laser beam powers, to achieve proper implosion symmetry. Results show inner beam propagation is not degraded compared to CH ablators, corroborated by laser backscatter measurements. Variations in shape compared to CH ablators also provides information about the cross beam energy transfer used to adjust the equatorial shape and thus infer information about the differences in plasma conditions near the laser entrance holes. Experimental results and modeling implosion shape for Be capsules will be presented with comparisons to CH ablators. [1] G.A.Kyrala, RSI 81,10E316(2010). [2] J.R.Rygg, et al., PRL. 112,195001(2014).

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