Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

New Advanced Hohlraums Utilizing Unique Geometries and Foam Components[1] O.S. JONES, M. TABAK, P.A. AMENDT, J.H. HAMMER, LLNL, B. AFEYAN, Polymath Research, Inc., K.L. BAKER, M.M. BIENER, S.H. KIM, S.A. MACLAREN, C.A. THOMAS, LLNL — To date the indirect drive experiments on the NIF have principally utilized cylindrical gas-filled hohlraums that have been subject to a number of challenges, including generating inner cone SRS backscatter (up to 18 percent of total laser energy), producing hot electrons, and requiring cross beam energy transfer to inner beams to obtain adequate drive symmetry. Proposed new hohlraum concepts address the challenges facing standard cylindrical gas-filled hohlraums by having the beams traverse shorter, hotter plasmas to reduce backscatter, shielding the capsule from direct illumination from the laser spots, or avoiding cross-beam transfer altogether by not allowing crossing of the beams. These concepts also utilize high-Z and mid-Z foams to increase stability of the wall/fill interface, increase x-ray conversion efficiency, reduce backscatter, reduce symmetry swings, and allow smaller, more efficient, laser entrance holes.

[1]Prepared by LLNL under Contract DE-AC52-07NA27344

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Date submitted: 23 Jul 2015 Electronic form version 1.4