Abstract Submitted
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Indirectly-driven ICF implosions in Advanced Hohlraums on the National Ignition Facility[1] JAMES ROSS, HARRY ROBEY, PETER AMENDT, MATT BRUHN, DEBBIE CALLAHAN, HUI CHEN, NIKO IZUMI, NATHAN MEEZAN, MARIUS MILLOT, JOHN MOODY, ALASTAIR MOORE, OMAR HURRICANE, ARTHUR PAK, BRANDON WOODWORTH, Lawrence Livermore Natl Lab — New advanced hohlraum concepts, the I-Raum [1] and the Frustraum, has been experimentally tested on the NIF. I-Raum results show enhanced inner beam propagation compared to a typical cylindrical hohlraum. This enhanced propagation is achieved by recessing the location where the outer beam cones hit the hohlraum wall. This target modification delays when the Au wall material, driven by the outer beam cones, obstructs the inner beam and reduces propagation. Initial subscale Frustraum experiments have also been completed showing increased capsule coupling efficiency compared to a cylinder, but challenging symmetry control. X-ray images of the Au wall motion and measurements of the shape of the imploded capsule have been measured for each advanced hohlraum concepts and are compared to cylinder results. [1] H. F. Robey et al., "The I-Raum: A new shaped hohlraum for improved inner beam propagation in indirectly-driven ICF implosions on the National Ignition Facility", Phys Plasmas 25, 012711 (2018).

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