Abstract Submitted
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Wetted Foam Liquid DT Layer ICF Experiments at the NIF[1] R. E. OLSON, R. J. LEEPER, R. R. PETERSON, S. A. YI, A. B. ZYLSTRA, J. L. KLINE, P. A. BRADLEY, L. YIN, D. C. WILSON, B. M. HAINES, S. H. BATHA, LANL — A key physics issue in indirect-drive ICF relates to the understanding of the limitations on hot spot convergence ratio (CR), principally set by the hohlraum drive symmetry, the capsule mounting hardware (the "tent"), and the capsule fill tube. An additional key physics issue relates to the complex process by which a hot spot must be dynamically formed from the inner ice surface in a DT ice-layer implosion. These physics issues have helped to motivate the development of a new liquid DT layer wetted foam platform[1] at the NIF that provides an ability to form the hot spot from DT vapor and experimentally study and understand hot spot formation at a variety of CR's in the range of 12<CR<25. Flexibility in CR will provide a means for exploring variations in the partitioning of available energy between the hot spot and the low adiabat cold fuel during the stagnation process and can allow for a fundamentally different (and potentially more robust) process of hot spot formation[2]. This new experimental platform is currently being used in a series of experiments to discover a range of CR's at which DT layered implosions will have understandable performance – providing a sound basis from which to determine the requirements for ICF ignition. [1]R. E. Olson *et al.*, J. Phys. Conf. Ser. **717**, 012042 (2016). [2]R. E. Olson and R. J. Leeper, Phys. Plasmas **20**, 092705 (2013).

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