Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Quantifying uncertainty in NIF implosion performance across target scales\f1[1] BRIAN SPEARS, K. BAKER, S. BRANDON, M. BUCHOFF, D. CALLAHAN, D. CASEY, J. FIELD, J. GAFFNEY, J. HAMMER, K. HUMBIRD, O. HURRICANE, M. KRUSE, D. MUNRO, R. NORA, L. PETERSON, P. SPRINGER, C. THOMAS, Lawrence Livermore Natl Lab — Ignition experiments at NIF are being performed at a variety of target scales. Smaller targets require less energy and can be fielded more frequently. Successful small target designs can be scaled up to take advantage of the full NIF laser energy and power. In this talk, we will consider a rigorous framework for scaling from smaller to larger targets. The framework uses both simulation and experimental results to build a statistical prediction of target performance as scale is increased. Our emphasis is on quantifying uncertainty in scaling predictions with the goal of identifying the dominant contributors to that uncertainty. We take as a particular example the Big Foot platform that produces a round, 0.8 scale implosion with the potential to scale to full NIF size (1.0 scale).

[1]This work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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Date submitted: 20 Jul 2016 Electronic form version 1.4