

Abstract Submitted
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The First Indirect Drive, High-Foot Beryllium Campaign on the National Ignition Facility¹ A.N. SIMAKOV, D.C. WILSON, S.A. YI, J.L. KLINE, R.E. OLSON, N.S. KRASHENINNIKOVA, G.A. KYRALA, T.S. PERRY, S.H. BATHA, LANL, D.S. CLARK, B.A. HAMMEL, J.L. MILOVICH, J.D. SALMONSON, LLNL — For indirect drive ICF, beryllium (Be) ablaters offer a number of important advantages over carbon-based ablaters, which can be used to significantly improve the target ignition margin. Recently we designed a number of modern NIF Be high-foot targets optimized for hydrodynamic stability. They employ the standard 5.75 mm gold hohlraum and allow for a range of adiabats, laser drive powers/energies, and fuel ice thicknesses. Here, we will outline the first NIF Be experimental campaign that began in August of 2014. It is based upon a low-yield (high 10^{14} neutrons) but very hydrodynamically robust high-foot target driven by a 350 TW/1.4 MJ pulse and using a 130 μm DT ice layer. The goal is to obtain a near-1D implosion while quantifying Be target performance uncertainties, cross-comparing with other ablaters to elucidate main limitations of our predictive capabilities, and testing superior Be ablator properties near high-foot plastic performance cliffs.

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