

Abstract Submitted
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Analyses of Cryogenic Implosions at the National Ignition Facility¹ D.E. HINKEL, D.S. CLARK, D.C. EDER, O.S. JONES, Lawrence Livermore National Laboratory — Cryogenic fuel layer experiments are currently underway at the National Ignition Facility (NIF). These experiments compress a ~ 1 mm sphere comprised of DT gas, frozen DT, and an ablator into a high density, cold shell that surrounds a low density hotspot where fusion is initiated. Accompanying experiments provide shock timing [1] and converging ablator [2] information about these implosions. Analyses use a tuned radiation source that is currently a best effort to match shock timing data, converging ablator data, bang time, and the fuel areal density [3]. These sources are used in multi-dimensional capsule simulations with representations of the as-shot ablator surface roughness and ice roughness, a representation of the largest groove present in the DT ice layer, the capsule tent, and radiation asymmetry. They are also used in growth factor simulations. Presented here is an example of a tuned radiation source, and subsequent results.

[1] T. R. Boehly *et al.*, Phys. Plasmas **18**, 092706 (2011)

[2] D. G. Hicks *et al.*, Phys. Plasmas **17**, 102703 (2010).

[3] D. S. Clark, invited talk, this meeting.

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