

Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Modeling of NIF Wetted-Foam Capsule Experiments ROBERT PETERSON, RICHARD OLSON, JOHN KLINE, Los Alamos National Laboratory — Wetting of a foam with liquid DT or DD in an ICF capsule provides a mechanism of directly controlling the convergence ratio of the implosion. The density of the DD or DT vapor in the central void in the CH foam is set by the temperature of the liquid fuel, so the convergence ratio is easily adjustable [1]. The capsule is driven by a two step laser pulse on NIF. The ablator is made of high density carbon in these experiments, but it could be beryllium. The experiments will test how well the modeling computer codes agree with experiment as the convergence ratio increases. It is possible that as the convergence ratio increases, a point will be reached where the modeling no longer agrees with experiment. We wish to find this limit. In the presentation we will present computer model simulations in 1-D of the performance of NIF wetted-foam capsules, where the vapor density, the ablator type, and the choice of fuel (DD or DT) are varied.

[1] R.E. Olson and R.J. Leeper, Phys. Plasmas 20, 092705 (2013).

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Date submitted: 21 Jul 2015

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