

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Mix Calculations of Double-Shell capsule implosions on Omega and NIF N.D. DELAMATER, G.R. MAGELSSSEN, M.A. GUNDERSON, D.C. WILSON, I.L. TREGILLIS, Los Alamos National Lab — Recently, Los Alamos has renewed its effort [1] to design and evaluate double-shell capsules as an alternative to the single-shell cryogenic NIF design. [2] The recent work by Livermore is being used as a starting point. [3-4] One to two megajoules of laser energy is used as input into the designs being considered. 1D and 2D integrated calculations of both the NIF capsule design and the double-shell design recently fielded on Omega will be presented. The unmixed calculations for a NIF design give ignition with moderate gain < 10 . Calculations of the Omega double shell design are shown and application of the Omega experiments to the scaled up NIF double shell ignition design is discussed. Sensitivity to mix effects in these implosions with respect to overall yield, implosion hydro, asymmetry and imploded capsule core x-ray emission is investigated using a multi-fluid interpenetration model. [5,6] Work supported by US DOE/NNSA, performed at LANL, operated by LANS LLC under Contract DE-AC52-06NA25396 [1] W. S. Varnum et al., Phys. Rev. Lett. 84, 5153 (2000). [2] D. A. Callahan et al., Phys. of Plasmas 13, 56307 (2005). [3] P. A. Amendt et al., Phys. Rev. Lett. 94, 65004 (2005). [4] J. L. Milovich et al., Phys. of Plasmas 11, 1552 (2004). [5] A.J. Scannapieco and B. Cheng, Phys. Lett. A., 299, 49 (2002). [6] D.C. Wilson, et al., Phys. of Plasmas 11, 2723 (2004)

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Date submitted: 18 Jul 2007

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