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Analysis of directly driven OMEGA experiments to assess the effect of 3He on capsule implosion and yield J.H. COOLEY, H.W. HERRMANN, J.M. MACK, C.S. YOUNG, J. LANGENBRUNNER, D.C. WILSON, S.C. EVANS, T.J. SEDILLO, G.A. KYRALA, LANL, NM, C.J. HORSEFIELD, D.W. DREW, W.J. GARBETT, AWE, UK, E.K. MILLER, NSTec STL, CA, V. YU GLEBOV, LLE, UR, NY — Los Alamos has been performing experiments to better understand the anomalous effects of 3He on capsule yield demonstrated by MIT[1]. Experiments were performed on the OMEGA laser at Laboratory for Laser Energetics (LLE) using a 600ps 16kJ square pulse. The targets were 4.9 μm SiO2 capsules with 1100 μm diameter. The gas fill 3He was varied with the amount of T fixed. The amount of D was varied in a way to ensure hydrodynamic equivalence of the fully ionized DTHe3 gas. In this paper we present results of modeling these experiments. In particular we evaluate the possible confounding effects of target and drive uncertainties on the interpretation of the results and attempt to assess to what degree the 3He effects diagnostics of interest. We also investigate effects of pressure multipliers on the gas EOS to understand if a poor EOS can lead to the observed behavior. [1] Rygg et. al., Phys. Plasmas 13, 2006

James Cooley
LANL, NM

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