

Abstract Submitted  
for the DPP12 Meeting of  
The American Physical Society

**Anomalous shock-yields in direct- and indirect-drive  $D^3He$  exploding pushers** H.G. RINDERKNECHT, C.K. LI, M. GATU-JOHNSON, A. ZYLSTRA, M. ROSENBERG, J. FRENJE, F.H. SEGUIN, R.D. PETRASSO, MIT, P. AMENDT, A. MILES, J.R. RYGG, LLNL, V. YU GLEBOV, C. STOECKL, T. SANGSTER, LLE — Anomalous reduction of the fusion yield relative to expected values from hydrodynamic scaling was first observed in  $D^3He$  gas-filled ablatively-driven capsule implosions. . Whether a similar reduction exists in  $D^3He$  gas-filled exploding pushers is still being debated. Recent direct- and indirect-drive exploding pushers filled with mixtures of  $D^3He$  fuel at OMEGA have demonstrated anomalous reduction of the DD-neutron shock yield in both platforms. A reduction of  $\sim 50\%$  is determined for 50:50 mixtures of  $D^3He$  fuel, when compared to the expected yield scaled from implosions filled with a hydroequivalent pressure of  $D_2$  fuel. The methodology and results of these experiments will be presented, and possible explanations for the anomalous yield reduction will be discussed and compared to LASNEX simulations. This work was supported in part by the U.S. DOE, LLNL and LLE.

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Date submitted: 13 Jul 2012

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