

Abstract Submitted
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Studies of fuel-bulk flows using charged-particle and neutron spectrometry on OMEGA and the NIF M. GATU JOHNSON, H. RINDERKNECHT, M. ROSENBERG, H. SIO, A. ZYLSTRA, J. FRENJE, C.K. LI, F. SEGUIN, R. PETRASSO, MIT, J. DELETTREZ, V. GLEBOV, J. KNAUER, P. MCKENTY, T.C. SANGSTER, LLE, B. APPELBE, Imperial College, P. AMENDT, C. BELLEI, R. BIONTA, D. BLEUEL, J. CAGGIANO, D. CASEY, J. EDWARDS, R. HATARIK, S. HATCHETT, O. LANDEN, LLNL — A. MACK-INNON, J. MCNANEY, D. MUNRO, J. PINO, S. WILKS, C. YEAMANS, LLNL, J. KILKENNY, A. NIKROO, GA – Charged-particle and neutron spectra are used to study fuel-bulk flows, which are indicative of implosion asymmetries and inefficient conversion of kinetic energy to thermal energy. We distinguish between (i) collective, directional motion of the burn region, which manifests itself as a directional shift of the fusion-product spectrum, and (ii) radial flow, which appears as an additional broadening of the spectrum relative to expected based on T_i Doppler broadening. In this talk, we will present neutron and charged particle spectra from OMEGA and the NIF, which display the effect of these phenomena and their relation to implosion asymmetry. This work was supported in part by the U.S. DOE, LLNL and LLE.

F. Seguin
MIT

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