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Impact of flows on ion temperatures inferred from neutron spectra in asymmetrically driven OMEGA DT implosions [1] M. GATU JOHNSON, J.A. FRENJE, F.H. SEGUIN, R.D. PETRASSO, MIT, B. APPELBE, J. CHITTENDEN, C. WALSH, Imperial College, J.P. KNAUER, V.YU. GLEBOV, C. FORREST, F. MARSHALL, T. MICHEL, C. STOECKL, T.C. SANGSTER, LLE, A. ZYLSTRA, LANL — Ion temperatures ($T_{\rm ion}$) in Inertial Confinement Fusion (ICF) experiments have traditionally been inferred from the broadening of primary neutron spectra. Directional motion (flow) of the fuel at burn, expected to arise due to asymmetries imposed by engineering features (such as stalks, fill tubes, tents, or capsule imperfections) or drive non-uniformity, also impacts broadening and may lead to artificially inflated "$T_{\rm ion}$" values. Flow due to low-mode asymmetries is expected to give rise to line-of-sight variations in measured $T_{\rm ion}$, as observed in OMEGA cryogenic DT implosions but not in similar experiments at the NIF. In this presentation we report on an OMEGA experiment with intentionally asymmetric drive, designed to test the ability to accurately predict and measure line-of-sight differences in apparent $T_{\rm ion}$ due to low-mode asymmetry-seeded flows. The results provide insight into the complexity of hot-spot dynamics, which is a problem that must be mastered to achieve ICF ignition.

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