

Abstract Submitted
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Measurements of Deuterium–Tritium Fuel Fractionation from Kinetic Effects in Ignition-Relevant Direct-Drive Cryogenic Implosions C. FORREST, V.YU. GLEBOV, J.P. KNAUER, P.B. RADHA, S.P. REGAN, T.C. SANGSTER, C. STOECKL, Laboratory for Laser Energetics, U. of Rochester — Measurements of DT and DD reaction yields have been studied using ignition-relevant, cryogenically cooled deuterium–tritium gas-filled cryogenic DT targets in inertial confinement fusion (ICF) implosions. In these experiments, carried out at the Omega Laser Facility,¹ high-resolution time-of-flight spectroscopy was used to measure the primary neutron peak distribution required to infer the DT and DD reaction yields. From these measurements, it will be shown that the yield ratio has a χ^2 /per degree of freedom of 0.67 as compared with the measured fraction of the target fuel composition. This observation indicates that kinetic effects leading to species separation are insignificant in ICF ignition-relevant DT implosions on OMEGA. This material is based upon work supported by the Department Of Energy National Nuclear Security Administration under Award Number DENA0001944.

¹T. R. Boehly *et al.*, Opt. Commun. **133**, 495 (1997).

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