Abstract Submitted
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Thermal conductivity study at CH/Be interface by refraction-enhanced x-ray radiography[1] YUAN PING, OTTO LANDEN, JEFF KOCH, DAMIEN HICKS, RUSSEL WALLACE, GILBERT COLLINS, LLNL — Transport properties near the fuel-ablator interface at the edge of an ICF capsule are important for modeling the growth of hydrodynamic instabilities, which determines the mix level in the fuel and is critical for successful ignition (Hammel, et al. HEDP 6, 671, 2010). A novel technique, time-resolved refraction-enhanced x-ray radiography, is developed to study thermal conductivity at the interface (Ping et al. J. Instru. 2011). Experiments using OMEGA laser have been carried out for CH/Be targets isochorically heated by x-rays to measure the evolution of the density gradient at the interface due to thermal conduction. The sensitivity of this radiographic technique to discontinuities enabled observation of shock/rarefraction waves propagating away from the interface. Comparison of data and simulation results using various conductivity models will be presented.

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