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LASNEX Radiation Wave Simulations and Implications for Temperature Measurements HEIDI TIERNEY, Los Alamos National Laboratory, ROBERT PETERSON, PAUL KEITER, THOMAS TIERNEY, GLENN MAGELSSEN, LANL — LANL is developing a diagnostic platform that will allow temperature measurements of a radiation front as it propagates through a medium. These diagnostic development experiments, called NIF Platform Five, are being performed at University of Rochester's 60-beam OMEGA laser. The OMEGA NIF-5 experiments use a 3/4-scale hohlraum mounted on the P6-P7 axis. Fifteen beams are used to drive the hohlraum to radiation temperatures near 220-240 eV in a 1-ns pulse. A radiation wave flows through a 60-mg/cc CHCl foam, which is mounted in a cylinder on the opposite side of the hohlraum from the 0.8-mm diameter LEH. A backlighter is used to perform measurements of absorption spectroscopy for electron temperature determination, while self emission is the primary process that allows measurement of radiation front position. We present 2-D R-Z LASNEX simulations of data taken at OMEGA using a soft x-ray framing camera in January 2007. The simulated laser drive, target shape, and material composition replicate experimental conditions for individual shots as closely as possible. Post processing tools for radiation transport and filtering have been used for final comparison with the soft x-ray camera measurements. Data comparison to simulation and implications for temperature measurements will be discussed.

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