

Abstract Submitted
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Lasnex Predictions for Z Opacity Experiments Using Tampers of Increased Mass (LA-UR-14-24932) HEIDI MORRIS, MANOLO SHERRILL, CHRIS FONTES, Los Alamos National Laboratory, JIM BAILEY, GREG ROCHAU, TAISUKE NAGAYAMA, Sandia National Laboratories — 2-D Lasnex radiation hydrodynamics simulations have been performed for opacity experiments carried out at Sandia National Laboratories' Z facility. The Z facility has a demonstrated capability for obtaining opacity measurements for iron in the 800-1800 eV x-ray range by showing agreement with PRISMSPECT, MUTA, and OPAL opacity models within experimental error bars. These experiments have been successfully repeated on the upgraded Z machine, ZR. More recently, efforts have focused on achieving opacity measurements for various materials with increased electron density and temperature. Increased mass CH and Be tampers have recently been used to attempt to increase the sample electron density and temperature to 8×10^{22} e-/cm³ and 193eV. The time-dependent sample conditions and hydrodynamics will be discussed for CH and Be tampers. Instantaneous and time integrated simulated transmission spectra for both tampers will be presented. Measurement of the spatially and temporally resolved x-ray spectrum is in progress for the new ZR, and could help constrain the simulations.

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