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**Generating uniform, non-equilibrium, mid- to high-Z plasmas for radiative properties studies at the Omega laser facility**[1] G. ELIJAH KEMP, L.C. JARROTT, E.V. MARLEY, R.F. HEETER, D.A. LIEDAHL, C.W. MAUCHE, P.K. PATEL, M.B. SCHNEIDER, K. WIDMANN, M.E. FOORD, LLNL
— Recent experiments and theoretical work are focused on improving our non-local thermodynamic equilibrium (NLTE) atomic models, important for understanding intense laser-heated plasma such as those found in inertial confinement fusion (ICF) hohlraums and high-energy-density (HED) experiments. These hot (multi-keV), highly ionized plasmas, require complex NLTE atomic physics modeling to predict the radiation emission and transport. A laser-heated, buried-layer target platform on the Omega laser facility is being developed for the purposes of benchmarking our atomic physics models – plasma density and temperature uniformity of the mid- to high-Z buried-layer are critical to this work. We describe our radiation-hydrodynamic simulations used to understand the spatial and temporal evolution of the density, temperature and x-ray emission. Comparisons with Omega data along with designs to push the platform to more extreme conditions on the National Ignition Facility will be presented.

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