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Heating, Hydrodynamics, and Radiation From a Laser Heated Non-LTE High-Z Target WILLIAM GRAY, M.E FOORD, M.B SCHNEIDER, M.A BARRIOS, G.V BROWN, R.F HEETER, L.C. JARROTT, D.A LIEDAHL, E.V MARLEY, C.W MAUCHE, K WIDMANN, Lawrence Livermore Natl Lab —
We present 2D R-z simulations that model the hydrodynamics and x-ray output of a laser heated, tamped foil, using the rad-hydro code LASNEX. The foil consists of a thin (2400 A) cylindrical disk of iron/vanadium/gold that is embedded in a thicker Be tamper. The simulations utilize a non-LTE detailed configuration (DCA) model, which generates the emission spectra. Simulated pinhole images are compared with data, finding qualitative agreement with the time-history of the face-on emission profiles, and exhibiting an interesting reduction in emission size over a few ns time period. Furthermore, we find that the simulations recover similar burn through times in both the target and Be tamper as measured by a time-dependent filtered x-ray detector (DANTE). Additional results and characterization of the experimental plasma will be presented. This work performed under the auspices of U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract DE-AC52-07NA27344.

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