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Abstract

We present a study of laser produced radiative shocks in a Xenon gas made with the 2D simulation code ARWEN. The time evolution of the plasma is computed using a conservative multimaterial hydrodynamic method while we use a multigroup radiation transport package to get the plasma radiative properties. We have improved the calculation of equation of state and opacity tables suitable for including in simulation codes to study laboratory astrophysics as well as other processes like ICF and FI or X-ray secondary sources. We have improved the original QEOS model to fit the available experimental data and molecular dynamics simulations. For opacity calculations we use the code BiGBART in LTE conditions, with self-consistent data generated with the Flexible Atomic Code. Non-LTE effects are approximately taken into account by means of the improved RADIOM model, which makes use of existing LTE data tables.