Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

New Prism Opacity Tables with Hot Electron Effects TIMOTHY WALTON, JAMES SEBALD, IGOR GOLOVKIN, JOSEPH MACFARLANE, Prism Computational Sciences (United States) — We present new features of the PROPACEOS code, which generates equation-of-state (EOS) and opacity tables for radiation-hydrodynamics and spectroscopic simulations. In addition to existing capabilities to produce tables for LTE and optically thin NLTE plasmas, these new features allow PROPACEOS to perform calculations that include other effects of NLTE atomic kinetics. The primary purpose of this development is to facilitate efficient spectroscopic simulations for short-pulse laser experiments. The simulations are based on post-processing of PIC calculations and focus on the analysis of K-alpha/K-beta emission signatures. PROPACEOS can now produce emissivity and opacity databases on a grid with up to six independent parameters, e.g. plasma temperature, plasma density, and analytic function parameters for hot electrons. These new tables can be used to post-process PIC simulation hydro data containing binned hot electron distributions, resulting in greatly improved speeds for SPECT3D spectroscopic simulations. We will present simulation results relevant to ongoing experiments at the Omega EP laser facility. This material is based upon work supported by the U.S. Department of Energy, Office of Science, Fusion Energy Sciences (FES) under Award Number DE-SC0018105

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Date submitted: 03 Jul 2019 Electronic form version 1.4