Abstract Submitted
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Improved inline model for nonlocal electron transport in HYDRA[1] M.M. MARINAK, G.D. KERBEL, M.V. PATEL, H. ROBEY, Lawrence Livermore National Laboratory, C.P. RIDGERS, University of York, R.J. KINGHAM, Imperial College London — The nonlocal electron transport model in HYDRA has been improved in several respects. The original multigroup model has been extended to include the cascade in energy as particles slow down, yielding a more accurate range. The model was also extended to account for contributions to the energy loss rate due to bound electrons. These are among the important modifications that have enabled the package to simulate classes of suprathermal electrons. We show recent calculations using the model that suggest superthermal electrons could be having a significant effect on performance of cryogenic capsule implosions on the National Ignition Facility. We evaluate the nonlocal transport model's accuracy by comparison with an electron VFP code. Comparisons assess the accuracy of the calculated thermal transport for plasmas relevant to NIF experiments.

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