Abstract Submitted
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Design process for applying the nonlocal thermal transport iSNB model to a Polar-Drive ICF simulation DUC CAO, GREGORY MOSES, University of Wisconsin, Madison, JACQUES DELETTREZ, TIMOTHY COLLINS, University of Rochester Laboratory for Laser Energetics — A design process is presented for the nonlocal thermal transport iSNB (implicit Schurtz, Nicolai, and Busquet[1]) model to provide reliable nonlocal thermal transport in polar-drive ICF simulations. Results from the iSNB model are known to be sensitive to changes in the SNB "mean free path" formula, and the latter's original form required modification to obtain realistic preheat levels.[2] In the presented design process, SNB mean free paths are first modified until the model can match temperatures from Goncharov's thermal transport model in 1D temperature relaxation simulations. Afterwards the same mean free paths are tested in a 1D polar-drive surrogate simulation to match adiabats from Goncharov's model. After passing the two previous steps, the model can then be run in a full 2D polar-drive simulation. This research is supported by the University of Rochester Laboratory for Laser Energetics.

[1]Schurtz, Nicolai, and Busquet. Phys. Plasmas **7**, 4238 (2000)
[2]Cao, Moses, and Delettrez. al **J**. Comput. Phys. (Submitted 2014)

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