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Nonlocal heat transport using optically-smoothed lasers in direct-drive ICF[1] MICHAEL KESKINEN, DENIS COLOMBANT, ANDREW SCHMITT, Plasma Physics Division, Naval Research Laboratory, WALLY MANHEIMER, RSI — Electron thermal conduction is important in direct-drive inertial confinement fusion. Since it is responsible for transporting laser energy absorbed near the critical surface into the overdense region, it can directly affect ablation and implosion dynamics. For high laser intensities, nonlocal transport models need to be used to accurately calculate populations of fast electrons which may lead to target preheat. Optically smoothed laser radiation changes on a coherence time scale. For these reasons we are developing a Fokker-Planck (FP) code which is coupled to an electromagnetic full-wave Maxwell solver. We present results from this coupled model for a range of laser intensities, using different collisional operators, e.g., Krook, and radiation transport effects for high-Z targets.

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Michael Keskinen
Plasma Physics Division, Naval Research Laboratory

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