Abstract Submitted
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Fokker-Planck transport simulations relevant to Polar-Direct-Drive[1] ROBERT KINGHAM, C. RIDGERS, Imperial College London, P.W. MCKENTY, S. SKUPSKY, V.N. GONCHAROV, G. LI, LLE, U. of Rochester — Polar-Direct-Drive (PDD) has recently been suggested as a way to perform direct-drive ICF on NIF [1], with minimal beam reconfiguration. Inherent in this scheme is an azimuthal variation in the laser energy deposition and consequently plasma temperature. This has interesting ramifications for thermal transport. We are exploring the nature of non-local heat flow and magnetic-field generation in PDD using the 2-D Vlasov-Fokker- Planck code IMPACT [2]. In particular there is the issue of whether Spitzer-Härm theory applies to the lateral heat-flow q_θ driven by azimuthal temperature gradients. We present IMPACT simulations representative of the critical-surface region of an imploding capsule that indicate lateral heat-flow suppression. Interestingly the thermal conductivities for q_θ and q_r are not directly linked and the implied flux limiters vary in space and time. We also present results showing spontaneous growth of B-fields via $\nabla n \times \nabla T$.

[1] S. Skupsky *et al.*, Phys. Plasmas **11**, 2763 (2004)
[2] R. Kingham and A.R. Bell, J. Comput. Phys. **194**, 1 (2004)

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