Abstract Submitted
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Flux-limitation of the Nernst effect in magnetized ICF[1] CHRISTOPHER RIDGERS, York Plasma Institute, University of York, UK, RION BARROIS, University of Technology, Eindhoven, The Netherlands, JOSHUA WENGRAF, University of Manchester, UK, JOHN BISSELL, University of Bath, UK, JONATHAN BRODRICK, York Plasma Institute, University of York, UK, ROBERT KINGHAM, Imperial College London, MARTIN READ, York Plasma Institute, University of York, UK — Magnetized ICF is a promising scheme which combines the advantages of magnetic and inertial confinement fusion. In the relevant high-energy density plasmas magnetic field evolution is often controlled by the Nernst effect where the magnetic field advects with the electron heat flow. It is well known that non-local thermal transport necessitates a flux-limiter on the heat flow. This suggests that a flux-limiter should also be applied to the Nernst effect. We have shown that this is the case using Vlasov-Fokker-Planck simulations and that the flux-limter is not the same as that required for the heat flow itself, for example when a NIF-relevant flux-limiter of 0.15 is required to limit the heat flow a Nernst flux limiter of 0.08 is required.

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