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Theory Experiment

Testing the Paleoclassical Model of Electron Heat Transport,* T.C. Arlen, *Cal Poly San Luis Obispo*, C.M. Greenfield, H.E. St. John, *GA*, J.D. Callen, *U. Wisc.* – A paleoclassical model for radial electron heat transport in magnetically confined plasmas has been proposed to explain the anomalous behavior that has been experimentally observed in tokamaks [1]. Energy transport in the electron thermal channel is not well understood, as evidenced by the fact that the experimentally inferred electron heat transport often exceeds the theoretical classical and neoclassical values by factors of about 10^4 and 10^2 respectively. The paleoclassical model has recently been implemented in the ONETWO transport analysis and simulation code, allowing comparison between predictions from this model and experimental data from DIII-D. Results of such comparisons will be shown for several different confinement regimes.

[1] J.D. Callen, *Phys. Rev. Lett.* **94**, 055002 (2005).

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