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A quantitative study of parallel electron heat flow along magnetic field lines MUKTA SHARMA, E.D. HELD, J.Y. JI, Utah State University — A code that solves the coupled electron drift kinetic and temperature equations has been written to study the effects of collisionality and particle trapping on temperature equilibration along magnetic field lines. A Chapman-Enskog-like approach is adopted with the time dependent distribution function written as the sum of a dynamic Maxwellian and a kinetic distortion expanded in Legendre polynomials. The drift kinetic equation is solved on a discrete grid in normalized speed and an FFT algorithm is used to treat the one-dimensional spatial domain along the magnetic field. The dependence of the steady-state temperature on collisionality and magnetic well depths is discussed in detail.

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