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Transport and Reconnection in Sawtoothing DIII-D Discharges[1] M.E. AUSTIN, K.W. GENTLE, U. of Texas at Austin, T.C. LUCE, GA, R.J. JAYAKUMAR, LLNL — Transport analysis has been done on DIII-D discharges with steady-state sawteeth. A comparison of radial electron heat flux with temperature gradient has been made using measurements of T_e(r,t) from the ECE radiometer. In the outer portion of the plasma, large changes in flux are observed for small changes in gradients. Inside the mixing radius, flux increases by small amounts while the gradient changes substantially. These results are general across different types of discharges. The analysis also yields an estimate of the electron dissipation from magnetic reconnection that occurs during a sawtooth crash. This is compared with determinations of internal magnetic energy from magnetics diagnostics.

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