Abstract Submitted
for the DPP10 Meeting of
The American Physical Society

Comparison of Measured Heat Flux Profiles with UEDGE Simulations of H-mode Discharges in DIII-D[1] M.A. MAKOWSKI, C.J. LASNIER, G.D. PORTER, D.N. HILL, LLNL, J.A. BOEDO, UCSD, A.W. LEONARD, General Atomics, J.G. WATKINS, SNL — On DIII-D we have performed a series of experiments designed to compare the upstream Thomson and midplane probe measurements of T_e with the downstream divertor heat flux width. Experimentally, we observe little correlation of heat flux width with the upstream temperature gradient scale length, contrary to simple two-point models. In order to determine what processes control the heat flux width, we model selected discharges with UEDGE. Preliminary analysis shows that the drifts are important in this regard and to a lesser extent impurity recycling. Without the drifts the electron temperature at the target plate is high and the density low, leading to a small-radiated power fraction. The drifts increase the plasma density at the plate and lower the temperature and bring the radiated power fraction into closer alignment with the experimentally measured power.

[1]This work performed under the auspices of the US Department of Energy under DE-AC52-07NA27344, DE-FG02-07ER54917, DE-FC02-04ER54698, and DE-AC04-94AL85000.

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Date submitted: 17 Jul 2010 Electronic form version 1.4