Abstract Submitted for the 51st Annual Meeting
Division of Plasma Physics
November 2–6, 2009, Atlanta, Georgia

Characterization and Scaling of Heat Flux Transport in the DIII-D SOL* M.A. Makowski, C.J. Lasnier, *LLNL,* A.W. Leonard, *GA*, J.A. Boedo, *UCSD*. In this study, we compare the divertor heat flux profile (width) to the upstream T_e profile in DIII-D. It is generally thought that the parallel heat flow in the scrape off layer (SOL), in competition with cross-field transport, governs the heat flux to the divertor. The relative importance of conduction versus convection within the SOL is not yet completely quantified for many operating regimes. In this study, we focus on an operational regime that generates Type I edge localized modes (ELMs). Two diagnostics, a fast framing IRTV and a Thomson scattering system, allow us to examine the relative role of conduction and convection of the T_e channel by comparing the upstream T_e width with the heat flux width in the divertor. We will present data scalings for a number of parameters scans including variations of plasma current, plasma density, and toroidal field at constant safety factor and input power.

*Work supported by the US DOE under DE-AC52-07NA27344, DE-FC02-04ER54698, and DE-FG02-07ER54917.