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Inferred Edge Thermal Transport in L- and ELM-Free H-Mode in DIII-D[1] W.M. STACEY, Georgia Tech, R.J. GROEBNER, General Atomics — We have recently developed a methodology for inferring thermal transport coefficients in the plasma edge from measured density and temperature profiles which takes into account important convective, ion-electron equilibration and atomic physics effects [1]. This methodology has been applied to infer ion and electron thermal diffusivities, $\chi_{i,e}(r)$, profiles in the edge of a DIII-D shot with L-mode and ELM-free H-mode phases. The expected order of magnitude reduction in transport coefficients was found, but across the entire edge region including both the pedestal "flattop" and "steep-gradient" regions, rather than just in a localized "transport barrier" coincident with the steep-gradient region. The inferred $\chi_{i,e}(r)$ are compared with various theoretical predictions.

[1] W.M. Stacey and R.J. Groebner, Phys. Plasmas **13** (2006).

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