

Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

Characteristics of H-mode Pedestals in Improved Confinement Regimes in DIII-D¹ R.J. GROEBNER, A.W. LEONARD, T.C. LUCE, C.M. GREENFIELD, G.L. JACKSON, T.H. OSBORNE, D.M. THOMAS, M.R. WADE, General Atomics, M.E. FENSTERMACHER, Lawrence Livermore National Laboratory — The characteristics of H-mode pedestals in improved confinement regimes are studied and compared to conventional ELMing H-mode discharges in DIII-D. These improved regimes include VH-mode, hybrid H-mode and Advanced Tokamak (AT) discharges. Initial results of this study show that across all regimes, 1) confinement improves as the pedestal electron beta-poloidal [$\beta_{\text{pol}e(\text{ped})}$] increases; 2) the global beta-poloidal of the plasma is linearly related to $\beta_{\text{pol}e(\text{ped})}$; and 3) the scale length for the electron pedestal pressure profile is of similar magnitude. Thus, the initial results of this study show that there is a continuum of pedestal parameters with various confinement regimes falling within this continuum. In other words, the improved confinement in these regimes does not result from a dramatic change in pedestal characteristics.

¹Work supported by U.S. DOE under DE-FC02-04ER54698 and

R.J. Groebner

Date submitted: 21 Jul 2005

Electronic form version 1.4