

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Confinement and Pedestal Characteristics in H-mode With ECH Heating¹ R. PRATER, J.S. DEGRASSIE, P. GOHIL, T.H. OSBORNE, C.C. PETTY, GA, E.J. DOYLE, UCLA, B. HUDSON, ORISE, M. MURAKAMI, ORNL — Good global confinement in H-mode discharges when electron heating is dominant is critical to the success of ITER, since the proposed heating schemes predominantly heat electrons. Most of the world database is derived from discharges with high power positive-ion neutral beam injection (NBI), which primarily heats the ions. Issues for dominant electron heating include the H-mode power threshold and effect on rotation, density profile, global confinement, pedestal height, and ELM characteristics. In DIII-D the electron cyclotron heating power is 3.5 MW, so observations of these effects can be made at powers well above the threshold. A study of a few relevant discharges suggests that the H-mode pedestal is not much different from that in NBI, and the global confinement relative to balanced NBI-only may be around 10% smaller. The H-mode pedestal and ELM characteristics are also not greatly different than for NBI H-modes, and this will be compared with EPED1 modeling.

¹This work was supported by the US DOE under DE-FC02-04ER54698, DE-FG03-01ERF54615, DE-AC05-06OR23100, and DE-AC05-00OR22725.

Ron Prater
General Atomics

Date submitted: 22 Jul 2009

Electronic form version 1.4