Abstract Submitted
for the DPP05 Meeting of
The American Physical Society

The H-mode Power Threshold and Plasma Rotation in Alcator C-Mod[1] JOHN RICE, MARTIN GREENWALD, JERRY HUGHES, AMANDA HUBBARD, BRIAN LABOMBARD, YIJUN LIN, EARL MARMAR, STEVE WOLFE, STEVE WUKITCH, MIT PSFC — It has long been known that the H-mode power threshold is higher with the X-point located away from the gradB drift direction. Recently, the role of rotation in the H-mode transition has been indicated in C-Mod plasmas. L-mode discharges in the USN configuration (away from gradB) exhibit strong (50 km/s) rotation in the counter-current direction, both in the core and at the edge. LSN discharges have relatively modest counter rotation. Application of ICRF power, which increases the plasma stored energy, increments the rotation in the co-current direction, proportionately. The transition to H-mode occurs when the core rotation switches from counter- to co-current, hence higher power is required to induce the transition in USN. Recent results with varying plasma current will be presented.

[1]work supported by DoE

John Rice
MIT PSFC

Date submitted: 21 Jul 2005 Electronic form version 1.4