

Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Dimensionless pedestal identity plasmas on Alcator C-Mod and JET G. MADDISON, M. BEURSKENS, K. ERENTS, M. KEMPENAARS, S. LISGO, UKAEA-1, A. HUBBARD, J. HUGHES, J. SNIPES, M. PORKOLAB, L. LIN, PSFC MIT-2, I. NUNES, CFN-IST, R. PASQUALOTTO, RFX-CNR, E. GIOVANNONZI, FTU-ENEA, EFDA-JET CONTRIBUTORS TEAM — Scaling of the H-mode pedestal is crucial for standard scenarios in ITER, but remains uncertain owing to the unresolved balance between plasma transport and edge source effects. This can be clarified using plasmas on different tokamaks with identical shape and dimensionless variables at the pedestal top, for which local transport should be the same. ELM-free H-modes at 7.9T, 1.3MA on C-Mod correspond to 1.4T, 0.9MA counterparts on JET, where a power scan in natural-density H-modes with small ELMs matched pedestal identity conditions for higher C-Mod densities. Measurements with a new Thomson scattering diagnostic indicated JET profile widths may be slightly wider than scaled C-Mod values. Modelling of refuelling terms in each device will compare their relative contributions to pedestal structures. Edge magnetic and density fluctuations will also be contrasted.

¹Funded jointly by the UK EPSRC and by the EC under the CoA between EURATOM and UKAEA.

²Supported by US DOE award DE-FC02-99ER54512.

Jerry Hughes
PSFC MIT

Date submitted: 20 Jul 2007

Electronic form version 1.4