

**Abstract Submitted for the 51st Annual Meeting
Division of Plasma Physics
November 2–6, 2009, Atlanta, Georgia**

Scaling of H-mode Pedestal and ELM Characteristics With Gyroradius* TH Osborne, RJ Groebner, AW Leonard, PB Snyder, GA; MNA Beurskens, LD Horton, P Lomas, S Saarelma, *EURATOM/UKAEA*; L Frassinetti, *Assoc. EURATOM-VR*; I Nunes, *Centro de Fusao Nuclear*; JET-EFDA and DIII-D Teams – The dependence of the H-mode pedestal structure and ELMs on gyroradius ($\rho^* = \rho/a$) was examined in experiments combining data from the JET and DIII-D to produce a factor of 4 variation in ρ^* , while keeping the plasma shape, q , normalized pressure (β), collisionality, Mach number, and T_i/T_e at the pedestal top constant. In this scan, the width of the steep gradient region of T_e and n_e , Δ , was independent of ρ^* within uncertainties, $\Delta/a \sim (\rho^*)^{0.0 \pm 0.15}$. The pedestal pressures and widths were in quantitative agreement with the EPED1 model in which the pedestal structure is set by combining the peeling-ballooning and kinetic ballooning stability thresholds. The ELM energy loss normalized to the pedestal energy decreased from 40% to 10% as ρ^* decreased by a factor of 2 in DIII-D, but the trend did not continue in smaller ρ^* on JET.

*Supported by US DOE under DE-FC02-04ER54698.