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☐ Theory ☒ Experiment

Pedestal Performance Dependence Upon Plasma Shape,*

A.W. Leonard, R.J. Groebner, T.H. Osborne, P.B. Snyder, D.M. Thomas, *GA*, T.A. Casper, *LLNL* – Higher moments of the plasma shape than triangularity are found to significantly affect the pedestal pressure and ELM characteristics in DIII-D. The shape dependence of the pedestal pressure was experimentally examined by holding the triangularity fixed and varying the squareness, the next higher moment of the shape, in the proposed ITER configuration. At low squareness the pedestal pressure increased by ~20% compared to the ITER target shape while the pressure decreased by ~20% at higher squareness. The ELM energy also varied with the shape and was a nearly constant fraction of the pedestal energy. Equilibrium reconstructions with variations of the pressure and current about the measured experimental conditions produced a stability map consistent with the experimental measurements of the pedestal pressure. The pedestal stability limit dependence upon global beta and shape is also examined.

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