

Abstract Submitted
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Pedestal limiting instability between ELMs: observations and comparison with gyrokinetic calculations* AHMED DIALLO, PPPL, J.W. HUGHES, PSFC, J. CANIK, ORNL, P. SNYDER, GA, M. GREENWALD, J. WALK, C. THEILER, E. DAVIS, B. LABOMBARD, J. TERRY, S-G. BAEK, PSFC, L. DELGADO-APRICIO, PPPL, T. GOLFINOPOULOS, A. HUBBARD, M.L. REINKE, A. WHITE, PSFC — On Alcator C-Mod, measurements of the inter-ELM fluctuations have been performed to determine the microinstabilities responsible for limiting the pedestal gradient increase in H-mode. The results show an onset of ion scale coherent density and magnetic fluctuations followed by a saturation of the edge temperature gradient. In addition, analysis shows that the mode is field-aligned consistent with a ballooning character. Preliminary stability analyses indicate that the discharges are near both the peeling ballooning and kinetic ballooning mode (KBM) thresholds. Gyrokinetic calculations indicate that the KBM is unstable in a region in the steep gradient. The results appear to be consistent with the EPED predictive model, which hypothesizes the existence of a violent KBM instability generating transport necessary to clamp the pedestal gradient. *Supported by US DOE contracts DE-AC02-09CH11466 and DE-FC02-99ER54512.

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