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Destabilization of internal kink by LHCD suprathermal electron pressure L. DELGADO-APARICIO, PPPL, S. SHIRAIWA, MIT-PSFC, L. SUGIYAMA, MIT-LNS, R. PARKER, R. GRANETZ, S. BAEK, R. MUMGAARD, I. FAUST, MIT-PSFC, S. SCOTT, N. GORELENKOV, N. BERTELLI, PPPL, C. GAO, M. GREENWALD, A. HUBBARD, J. HUGHES, J. IRBY, E. MARMAR, MIT-PSFC, P. PHILLIPS, U. Texas-Austin, J. RICE, G. WALLACE, MIT-PSFC, R. WILSON, PPPL, S. WOLFE, S. WUKITCH, MIT-PSFC — New observations of the formation of short-lived modes have recently been carried out on Alcator C-Mod. A (1,1) internal kink appears to be destabilized by the fast-electron pressure carried by the suprathermal electrons driven by Lower Hybrid Current Drive (LHCD). Surprisingly, the (1,1) fishbone-like activity can coexist with sawteeth, suggesting that the two modes have independent driving mechanisms. The frequency of the mode is comparable to the core toroidal rotation and that of the precursors. The electron energies responsible for driving the mode have been measured for the first time using the downshift of electron gyrofrequency due to relativistic effects. This is a new explanation for the so-called electron-fishbones. This work was performed under US DoE contracts DE-FC02-99ER54512, DE-AC02-09CH11466 and DE-FG03-96ER-54373.

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