Abstract Submitted
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Comparison of edge fluctuation measurements and energy and particle transport for I-mode plasmas on Alcator C-Mod[1] A. DOMINGUEZ, E.S. MARMAR, J.L. TERRY, J.W. HUGHES, I. CZIEGLER, P. ENNEVER, T. GOLFINOPOULOS , A.E. HUBBARD, B. LABOMBARD, B. LIPSCHULTZ, M. PORKOLAB, A.E. WHITE, D.G. WHYTE, PSFC-MIT — The I-mode regime features high energy confinement and low particle confinement, making it of interest both as a potential reactor regime as well as a physics case study for particle and energy channel separation. It has been observed that the I-mode is accompanied by two significant changes in edge fluctuations: The presence of a weakly coherent mode (WCM) at ∼250kHz and the suppression of broadband fluctuations at ∼50-150kHz during L-mode to I-mode transitions. Recently, experiments have been conducted which make use of Dα emission measurements close to the last closed flux surface (LCFS) in order to estimate the ionization source profile and, consequently, the particle transport across the LCFS. In addition, estimates of the energy transport across the LCFS are acquired using the TRANSP code. Results and analysis will be presented studying the features of the edge fluctuations and their connection to the energy and particle transport across the LCFS.

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