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Investigating the Mode Structure of the Weakly Coherent Mode¹ T. GOLFINOPOULOS, B. LABOMBARD, A. HUBBARD, J.W. HUGHES, D. WHYTE, R. GRANETZ, E.M. DAVIS, E. EDLUND, P. ENNEVER, M. GREEN-WALD, E. MARMAR, M. PORKOLAB, S.M. WOLFE, S.J. WUKITCH, ALCA-TOR C-MOD TEAM, Massachusetts Institute of Technology — The Weakly Coherent Mode (WCM, 200-500 kHz, $k_{\perp}\rho_s < 0.1$) is an edge phenomenon associated with I-mode, a steady state, ELM-free confinement regime that has been observed on the Alcator C-Mod, ASDEX-Upgrade, and DIII-D tokamaks. I-mode is characterized by high particle flux, creating a separation of transport channels that leads to the development of a temperature pedestal, but not a density pedestal. The WCM is thought to contribute to this increased particle flux, though its precise role in regulating edge transport is not well-understood. Here, we investigate the structure of the WCM, particularly regarding poloidal asymmetry, using data from poloidallyand toroidally-arrayed Mirnov coils, as well as phase contrast imaging, with radial profiles of T_e , n_e , and Φ in the scrape-off layer provided by the Mirror Langmuir Probe. The WCM phenomenology is then compared to that of the Quasi-Coherent Mode, the edge fluctuation responsible for exhausting impurities in the Enhanced D_{α} H-mode.

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Theodore Golfinopoulos Massachusetts Institute of Technology

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