

Abstract Submitted
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Structure and Characteristics of the Quasi-Coherent Mode in EDA H-mode Plasmas¹ I. CZIEGLER, J.L. TERRY, L. LIN, J.A. SNIPES, M. PORKOLAB, MIT-PSFC — The quasi-coherent mode (QCM), an edge fluctuation present in Enhanced D_α (EDA) H-mode confinement in Alcator C-Mod, is thought to have a decisive role in enhancing particle transport through the edge pedestal of these plasmas. We present detailed data of the mode structure both in real and spectral space, the propagation speed and direction in various regimes, and additional information on the resistive ballooning character of the mode (e.g. mode propagation with $\mathbf{k} \cdot \mathbf{B} \approx \mathbf{0}$ in the counter-current direction). We see a second harmonic at twice the frequency and poloidal wavenumber of the fundamental of the mode (k_θ^{fund} at $z = 0$ varies between 1-2 cm^{-1}); a radial phase variation over the ~ 1 cm region across the pedestal where the mode is present; and a ballooning-like poloidal variation in amplitude. These observations will be used to examine the strengths and weaknesses of different models of the QC fluctuation, and should be of use in understanding its mechanism.

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