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Coherent Modes in the Edge of DIII-D H-modes¹ R.A. MOYER, R. LEHMER, J.A. BOEDO, UC, San Diego, T.L. RHODES, C.L. RETTIG, E.J. DOYLE, UCLA, J.G. WATKINS, Sandia National Laboratories, R.J. GROEBNER, K.H. BURRELL, General Atomics — Electrostatic fluctuations in the edge of DIII-D H-modes are often characterized by the presence of a large amplitude, coherent or quasi-coherent mode ($f=50-60$ kHz; $\delta f=5-20$ kHz). This mode is similar to coherent modes in the edge of ohmic discharges in TEXT² and has also been seen in the edge of H-modes in PBX-M.³ The mode is localized to a narrow radial extent just inside the separatrix. In ohmic H-modes, the mode is a quasi-coherent, localized burst of turbulence. In beam heated discharges, the mode is coherent and dominates the power spectra for both density and potential fluctuations after onsetting 10–30 ms into the H-mode phase. In DIII-D, this mode directly drives particle and convective heat fluxes. Mode characteristics and plasma conditions at onset of the mode will be compared with theoretical predictions of such modes.

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²Tsui, et al., Phys. Rev. Lett. **70** (1993) 1565.

³Tynan et al., Phys. Plasmas **1** (1994) 3301.

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