

Abstract Submitted  
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**Reflectometry Analysis of Density Fluctuations in Alcator C-Mod**<sup>1</sup> A. DOMINGUEZ, E.S. MARMAR, J. SNIPES, L. LIN, M. PORKOLAB, MIT PSFC, D.R. MIKKELSEN, G.J. KRAMER, PPPL, N.P. BASSE, ABB Corporate Research — Electron density fluctuation measurements on Alcator C-Mod are presented for various density profiles using O-mode reflectometry. Seven discrete frequency channels ranging from 50GHz to 140GHz are radiated into the plasma from the low field side at the midplane of the tokamak, probing the cutoff density layers ( $n_e=3\times 10^{19}\text{m}^{-3}$  to  $n_e=2.4\times 10^{20}\text{m}^{-3}$  respectively) for electron density fluctuations. The system's output is provided by an I/Q detector, enabling the comparison of the measured signals with results from reflectometry modeling of density fluctuations in C-Mod plasmas. Turbulent phenomena are highlighted at different radial locations of the plasma and compared with other diagnostics such as Phase Contrast Imaging and magnetic pick-up coils. Reflectometry measurements for low density Internal Transport Barrier (ITB) plasmas are presented where the signal traverses the pedestal and probes the foot of the ITB.

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