

Abstract Submitted
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Density Fluctuation Measurements Using Fixed-Frequency Quadrature Reflectometers on DIII-D¹ G. WANG, W.A. PEEBLES, T.L. RHODES, E.J. DOYLE, N.A. CROCKER, X. NGUYEN, L. ZENG, S. KUBOTA, UCLA, G.R. MCKEE, U. Wisc.-Madison, G.J. KRAMER, R. NAZIKIAN, E.J. VALCO, PPPL, W.W. HEIDBRINK, UCI, M.A. VAN ZEELAND, ORISE — Two fixed-frequency reflectometers utilizing quadrature phase detection are employed on DIII-D to study both coherent and turbulent density fluctuations with high spatial/temporal resolution. Antennas can be orientated to launch and receive either O- or X-mode waves to probe different plasma regions. For coherent fluctuations, a 1-D phase screen model is applied to infer fluctuation levels. The result for an $m=3/n=2$ tearing mode agrees well with beam emission spectroscopy (BES). Reflectometry measurements of compressional Alfvén modes at two cutoff locations will be compared with predictions of the eigenmode radial structure. For turbulent measurements, a 2-D full wave code is employed to deduce density fluctuation levels which are in reasonable agreement with BES. These results together with data from the H-mode pedestal will be presented.

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