Abstract Submitted
for the DPP97 Meeting of
The American Physical Society

Sorting Category: 5.1.1.2 (experimental)

**Density Fluctuations in Microturbulence and High $\beta$ MHD in DIII–D Plasmas**[1] M. JAKUBOWSKI, R.J. FONCK, G.R. MCKEE, University of Wisconsin, Madison, C.M. GREENFIELD, General Atomics, R.V. BRAVENEC, University of Texas, Austin — Spatial and temporal behavior of plasma turbulence and MHD in DIII–D plasmas is characterized with density fluctuation measurements from the beam emission spectroscopy (BES) diagnostic. These localized measurements have allowed for determination of radial mode structure of neoclassical 3/2 and 2/1 modes in high $\beta$ plasmas and the dependence of this structure on plasma shape, density, and $q$ profile. The local microturbulence characteristics in DIII–D L–mode discharges appear similar to those observed in other high temperature tokamaks with high amplitudes at the edge that decrease rapidly to of order 1% or less towards the core. Present efforts are concentrating on using the newly expanded BES system and measurements of the local electric field in DIII–D to definitively determine the direction of propagation of the slow moving "ion mode" in the plasma core region. These measurements, plus determination of the $S(k_r)$ and $S(k_\theta)$ spectra, are being used to compare the background turbulence seen in DIII–D to theoretical predictions.

[1]Work supported by U.S. DOE Contract DE-AC03-89ER51114, Grants DE-FG02-89ER53296, DE-FG03-96ER54373.

☐ Prefer Oral Session
☒ Prefer Poster Session

M. Jakubowski
mckee@gav.gat.com
University of Wisconsin, Madison

Date submitted: July 8, 1997 Electronic form version 1.2