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2D Measurements of TEM Structure at Varying Driven Toroidal Rotation on DIII-D,[*] S.E. Zemedkun, Y. Chen Jr, T. Munsat, S.E. Parker, W. Wan, *U. Colorado*; S. Che, C.W. Domier, N.C. Luhmann, L. Yu, *UC-Davis*; B.J. Tobias, *PPPL* – The first experimental 2D mapping of drift modes, trapped electron mode (TEM) spatial evolution, T_e fluctuation levels, and dispersion relations are achieved using electron cyclotron emission imaging (ECEI) in a regime far from ITG parameter space in DIII-D. Linear gyrokinetic simulations with the GEM code find that the TEM is most unstable in the parameter regimes studied (a/L_n=1.27, a/L_{Ti}=1.9, a/L_{Te}=3.3), and exhibit a similar real frequency and eigenmode structure to that observed with ECEI. Measurements are made in L-mode discharges with neutral beam and electron cyclotron waves at fixed heating power over a range of driven toroidal rotation rates. 2D maps of the mode structure are determined using correlation techniques, and dispersion plots are constructed from the cross-phase and cross-spectral power. For different levels of NBI momentum input, T_e fluctuation levels measured over a range of poloidal wavenumbers (~0.5%, up to 200 kHz) decrease with increasing imposed toroidal rotation, which may be related to local shearing rates.

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