Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Mode identification using fingerprint method on DIII-D[1] MAX CURIE, MICHAEL HALFMOON, University of Texas at Austin, DAVID BROWER, University of California, Los Angeles, MIKE KOTSCHENREUTHER, University of Texas at Austin, JIE CHEN, University of California, Los Angeles, DAVID HATCH, SWADESH MAHAJAN, University of Texas at Austin — Comparisons between gyrokinetic simulations and experimental data from a new diagnostic tool: Faraday-effect Radial Interferometer-Polarimeter (RIP)[1] and Beam emission spectroscopy (BES)[2], are utilized for verification of micro-tearing instabilities (MTM) in DIII-D. Instability identification in simulations is achieved by using a variety of transport coefficients and their ratios to provide gyrokinetic fingerprints[3]. RIP will provide the $\frac{\int \delta(n_e B_r) dR}{\int n_e dR}$ with information of frequency, which can be compared with simulation results that provide strong indication that MTM are present in the pedestal region based on large $\frac{\delta B/B}{\delta n/n}$. BES measurements provide a location of density fluctuation with its amplitude at the outboard midplane. Global and local simulations using Gyrokinetic Electromagnetic Numerical Experiment (GENE) will be compared with experimental measurements. [1] J. Chen, W. X. Ding, D. L. Brower, et al., (2017) http://dx.doi.org/10.1063/1.4960056. [2] G. McKee et al., (1999) https://doi.org/10.1063/1.1149416. [3] M. Kotschenreuther et al., 56 (2019). https : / /iopscience.iop.org/article/10.1088/1741-4326/ab1fa2

[1]Work supported by US DOE grants DE-FG02-04ER54742, DE-AC02-09CH11466 and DE-FC02-04ER54698 and IFS in University of Texas at Austin.

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Date submitted: 03 Jul 2019 Electronic form version 1.4