Abstract Submitted
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Gyrokinetic analysis of linear instabilities within the pedestal of experimental discharges[1] ERIC WANG, XUEQIAO XU, Lawrence Livermore National Laboratory, JEFF CANDY, RICH GROEBNER, General Atomics, PHIL SNYDER — A pedestal pressure scan based on DIII-D discharge 131997 is being studied with GYRO in the numerically challenging edge pedestal regime to explore the physics of relevant microinstabilities. Initial studies seek to characterize electron drift instabilities in the edge barrier as well as study the onset of the KBM. In GYRO, both an initial value and an eigenvalue solver are employed to study both dominant and sub-dominant instabilities. A strong sensitivity of the growth rate and real frequency to small changes in the equilibrium profile is observed. To simplify the underlying physics, the Miller formulation for the flux surface geometry will be used in attempts to clearly identify the KBM. Beyond the Miller geometry, the exact flux-surface shape, including up- down asymmetry, is required to get accurate results, as the symmetry-breaking mechanism may generate significant momentum transport in the edge.

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