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Gyrokinetic analysis of H-mode pedestals[1] ERIC WANG, XUEQIAO XU, Lawrence Livermore National Laboratory, JEFF CANDY, General Atomics, SIYE DING, Institue of Plasma Physics, China Academy of Sciences — Recent advances in GYRO allow simulations to map out the linear stability of many eigenvalues and eigenvectors of the gyrokinetic equation (as opposed to only the most unstable) at low computational cost. These advances have been used to demonstrate the onset of the KBM in the pedestal DIII-D shot 131997 is slightly below ideal MHD predictions, and the most unstable mode has been benchmarked against other gyrokinetic codes. The present work expands on the previous results by including physics previously neglected and extending the work to additional discharges. In particular, the effects of collisions, parallel magnetic compression ($\delta B_{\parallel}$), and full shaping will be quantified in relation to the previous modeling. In addition, global effects will be addressed, with attention to how the boundary conditions should be handled near the edge. Finally, results from initial nonlinear simulations will be discussed.

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