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ETG Benchmarking for GENE/CGYRO/GEM Gyrokinetic Codes in the Pedestal Region EHAB HASSAN, Institute of Fusion Studies, University of Texas at Austin, WALTER GUTTENFELDER, Princeton Plasma Physics Laboratory , DAVID HATCH, Institute of Fusion Studies, University of Texas at Austin, YOUJUN HU, YANG CHEN, SCOTT PARKER, The Center for Integrated Plasma Studies, University of Colorado Boulder, GENE@IFS COLLABORATION, CGYRO@PPPL COLLABORATION, GEM@CU COLLABORATION
— Electron temperature gradient (ETG) driven turbulence is thought to be a major contributor to heat transport in H-mode pedestals. Despite its importance, no systematic benchmarking exercise has been undertaken to establish the agreement of multiple codes for such turbulence. The pedestal is characterized by steep gradients and strong geometric shaping and produces slab-like instabilities and isotropic fluctuations. All of these elements are in contrast with the more-familiar core scenarios that have been the focus of previous benchmarking studies. We will describe a benchmarking exercise between three gyrokinetic codes: GENE, CGYRO, and GEM at multiple locations in the Pedestal region. Comparisons between growth rates, frequencies, and mode structures will be presented. Initial studies demonstrate limited qualitative agreement. Careful treatments of, for example, geometry and collisions are expected to resolve remaining discrepancies.

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