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Benchmarking of the Gyrokinetic Microstability Codes GENE, GS2, and GYRO over a Range of Plasma Parameters[1] RONALD BRAVENEC, Fourth State Research, TOBIAS GOERLER, DANIEL TOLD, FRANK JENKO, Max Planck Institute for Plasma Physics, M.J. PUESCHEL, GEORGE MCKEE, Univ. Wisconsin, Madison, JEFF CANDY, ANDREA GAROFALO, STERLING SMITH, GARY STAEBLER, General Atomics, MICHAEL BARNES, Oxford University, CHRIS HOLLAND, Univ. California, San Diego, SIYE DING, Institute of Plasma Physics, Chinese Academy of Sciences, TERRY RHODES, Univ. California, Los Angeles — Comparing results from different gyrokinetic codes as a means of verification (benchmarking) is only convincing if the codes agree over a wide range of plasma conditions. Otherwise, agreement may simply be fortuitous. We present here linear and nonlinear comparisons of the Eulerian codes GENE, GS2, and GYRO for a variety of discharges and radii. These include the outer regions of DIII-D discharges with localized electron-cyclotron heating applied at different locations, the steep-gradient region of an EAST H-mode pedestal, a high poloidal beta DIII-D discharge with reversed magnetic shear in the core, and well-matched DIII-D discharges with varying degrees of toroidal rotation.

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