Sorting Category: 5.10 (theoretical)

Comparison of Experimental Diagnostic Signals with Stability Code Predictions[1] K.J. COMER, J.D. CALLEN, University of Wisconsin-Madison, A.D. TURNBULL, A.M. GAROFALO, E.J. STRAIT, General Atomics, M.E. AUSTIN, The University of Texas at Austin — A code has been written to compare experimental diagnostic signals with stability code predictions. Comparison of expected and actual diagnostic signals will help distinguish or identify modes by the signals they produce, and help validate stability codes. The perturbed diagnostic signal δS is predicted assuming the signal amplitude S convects with the plasma perturbation and the time derivative in the fluid frame is negligible, so that $\delta S = \tilde{\underline{\xi}} \cdot \underline{\nabla} S$, where $\tilde{\underline{\xi}}$ is the plasma displacement predicted by the stability code and $\underline{\nabla} S$ is the gradient of the experimental equilibrium diagnostic signal. Comparisons of predicted and actual ECE signals from stability codes for NCS and wall stabilized discharges in DIII–D show reasonable agreement with the measured signals.

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☐ Prefer Oral Session
☒ Prefer Poster Session

Special instructions: DIII–D Poster Session I (transport, turbulence, & stability), immediately following J Callen (U Wisc)

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