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Analysis tools for turbulence studies at Alcator C-Mod[1]
C. BURNS, MIT PSFC, S. SHEHATA, A.E. WHITE, I. CZIEGLER, A. DOMINGUEZ, J.L. TERRY, MIT PSFC, D.C. PACE, UC Irvine — A new suite of analysis tools written in IDL is being developed to support experimental investigation of turbulence at Alcator C-Mod. The tools include GUIs for spectral analysis (coherence, cross-phase and bicoherence) and characteristic frequency calculations. A user-friendly interface for the GENRAY code, to facilitate in-between shot ray-tracing analysis, is also being developed. The spectral analysis tool is being used to analyze data from existing edge turbulence diagnostics, such as the O-mode correlation reflectometer and Gas Puff Imaging, during I-mode, ITB and EDA H-mode plasmas. GENRAY and the characteristic frequency tool are being used to study diagnostic accessibility limits set by wave propagation and refraction for X-mode Doppler Backscattering and Correlation Electron Cyclotron Emission (CECE) systems that are being planned for core turbulence studies at Alcator C-Mod.

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