Abstract Submitted
for the DPP16 Meeting of
The American Physical Society

Correlation Electron Temperature Fluctuation Measurements on Alcator C-Mod and ASDEX Upgrade: Cross Machine Comparisons and Transport Model Validation[1] A. E. WHITE, A. J. CREELY, MIT, S. FREETHY, Max-Plank-IPP, N. CAO, MIT, G. D. CONWAY, T. GOERLER, T. HAPPEL, Max-Plank-IPP, N. T. HOWARD, C. INMAN, J. E. RICE, P. RODRIGUEZ FERNANDEZ, MIT, C. SUNG, UCLA, ALCATOR C-MOD, MIT, ASDEX UPGRADE, Max-Plank-IPP — Correlation Electron Cyclotron Emission diagnostics have been developed for Alcator C-Mod and ASDEX Upgrade. Measurements of long wavelength (ktheta rhos <0.5) electron temperature fluctuations have been measured in the core plasma (0.5 <r/a <0.95) of a variety of discharges, including high performance I-mode and H-mode plasmas, during dedicated ITG/TEM transition L-mode plasma experiments, across intrinsic rotation reversals in both Ohmic L-mode LOC/SOC plasmas and RF L-mode plasmas, and in Helium L-mode plasmas. With nearly identical instrument set-ups at two tokamaks, it is possible to carry out direct cross-machine comparisons, as well as multi-machine transport model validation, using nonlinear simulations with the GENE and GYRO codes and reduced models such as TGLF. Electron temperature fluctuations, and the correlation with density fluctuations, which can be measured with coupled radiometer / reflectometer diagnostics, provide valuable constraints on gyrokinetic models. Recent results in transport model validation at both C-Mod and AUG are presented.

[1]This work is supported by the US DOE under grants DE-SC0006419 and DEFC02-99ER54512-CMOD.

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Date submitted: 15 Jul 2016 Electronic form version 1.4