

Abstract Submitted  
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**Comparison of GS2 Turbulence Simulations with Phase Contrast Imaging in Alcator C-Mod Internal Transport Barriers** ANDREW LONG, Physics Dept, Cornell University, Ithaca, NY; Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA; NUF, Princeton U, DARIN ERNST, LIANG LIN, MIKLOS PORKOLAB, NILS BASSE, Plasma Science and Fusion Center, Massachusetts Institute of Technology, Cambridge, MA — Trapped electron mode (TEM) turbulence arises in gyrokinetic simulations of internal transport barriers in Alcator C-mod experiments [1]. C-mod is equipped with a PCI (phase contrast imaging) diagnostic which measures density fluctuations along 32 vertical chords passing near the magnetic axis. The GS2 density fluctuations are output as an integral along field lines. The GS2 poloidal wavelength spectrum is upshifted relative to the PCI spectrum [1]. To make the comparison more direct, we have modified GS2 [2] to calculate electron density fluctuations at the poloidal angles observed by PCI. The longer wavelength modes are more extended along field lines, so that when viewed off the midplane, they are weighted more strongly. Nonlinear simulations are underway, and results will be presented.

[1] D. R. Ernst et al., 20th IAEA Fusion Energy Conf. IAEA-CN-116/TH/4-1. also Phys. Plasmas 11(5) 2637 (2004). [http://www-naweb.iaea.org/napc/physics/fec/fec2004/datasets/TH\\_4-1.html](http://www-naweb.iaea.org/napc/physics/fec/fec2004/datasets/TH_4-1.html)

[2] W. Dorland et al., Phys. Rev. Lett. 85(26) 5579 (2000). funding: Contract number DE-AC02-76CH03073.

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