

Abstract Submitted
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Direct comparison of GEMR edge turbulence simulations with Alcator C-Mod SOL turbulence measurements¹ S. SCOTT, PPPL, B. SCOTT, Max-Planck-IPP, S. ZWEBENS, PPPL, J. TERRY, B. LABOMBARD, J. HUGHES, MIT-PSFC, D. STOTLER, PPPL — We report a direct comparison of measured SOL turbulence in Alcator C-Mod plasmas to a computational model. The turbulence measurements were made with gas puff imaging (GPI) and Langmuir probes, and the simulations were performed by the GEMR gyrofluid electromagnetic code [Phys. Plasmas 12 (2005) 102307]. Plasma conditions were chosen to match the capabilities of the computational model: near-circular, Ohmic, inner wall limited, with $B=2.9-5.4$ T and $I_p=0.4-0.8$ MA at fixed $q(a)$. The measured radial and poloidal correlation lengths in the C-Mod SOL were approximately a factor 1.5-2 larger than those predicted by GEMR, and both measured and computed correlation lengths showed a slow decrease with B , with relatively little change with SOL density. The measured and simulated autocorrelation times and frequency spectra were very similar at low B , but the measured autocorrelation time increased with B more strongly than in the simulations. Additional comparisons and limitations of these comparisons will be described.

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