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Observations of the Spatial and Temporal Structure of Edge Turbulence near the X-point of Alcator C-Mod[1] J.L. TERRY, MIT-PSFC, S.J. ZWEBEN, PPPL, B. LABOMBARD, I. CZIEGLER, MIT-PSFC, O. GRULKE, MPI for Plasma Physics — Movies of edge turbulence in the region just outboard of the typical LSN X-point location in C-Mod have been obtained using Gas-Puff-Imaging with a fast-framing (150,000 frames/s) camera. Images of the turbulence in a plane perpendicular to the local field show structures that are highly elongated in the local radial direction. Typically these structures move poloidally, but move only slightly outward in the elongation direction. Both the structure and the motion of the turbulent structures as imaged in this location are very different than the nearly circular cross-sectioned "blobs" that are observed near the outer midplane. Field line mapping of circular flux tubes at the midplane show that these are distorted into elongated "fingers" when mapped to the viewing location outboard of the X-point, consistent with the observations. Movies of the edge turbulence through L-to-H-mode transitions show no obvious precursor and typically show only a brief ($\sim$1 ms) quiescent period after the transition.

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