

Abstract Submitted
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Investigation of Turbulence, Intermittent Structures and Driven Flow in Magnetized Plasma Using Visible light Imaging DANIEL GUICE, DAVID SCHAFFNER, TROY CARTER, GIOVANNI ROSSI, STEVE VINCENA, University of California, Los Angeles — A fast framing camera is used to image plasma in the Large Plasma Device (LAPD) at UCLA. The use of a camera enables high spatial resolution in a single plasma discharge, without perturbing the plasma. Correlation between light fluctuations and plasma density is high, giving a physical link to what the camera records. From the light fluctuations instantaneous velocity fields are calculated using a wavelet based method that gives us the ability to estimate particle flux and Reynolds stress. These quantities are compared with results obtained with probes. Flow and flow shear is driven in the LAPD through applied bias on newly installed limiters; allowing for a detailed study of how shear flow modifies particle flux. Intermittent coherent structures (“blobs” and “holes”) have also been observed in the edge turbulence adjacent to the shear flow layer, and there effects on transport are investigated.

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