

Abstract Submitted
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Investigation of Intermittent Turbulence and Turbulent Structures in the Presence of Controlled Sheared Flows LINCAN YAN, MARK GILMORE, Univ. of New Mexico, NEAL CROCKER, TROY CARTER, TONY PEEBLES, UCLA — Convective ‘blobs’ (polarized filamentary structures) are observed in the boundary of a wide variety of magnetically confined plasmas – in both laboratory and fusion devices. Intermittency in the fluctuations and particle flux has also been observed near sheared flow layers internal to the plasma. However, while blob dynamics and blob transport have been investigated by a number of researchers, the mechanism of the formation of these structures has not received much experimental attention. Sheared flows are typically found at the plasma boundary and may play an important role in convective structure generation. Experiments are being conducted in both the LAPD (UCLA) and HELCAT (UNM) linear devices with the goal of elucidating the physics of the formation of intermittent structures at shear layers, as well as studying their dynamics. ExB flow shear is controlled by both biasing and the use of physical limiters. Initial measurements suggest that the correlation length inside the shear region depends strongly on magnetic field, while blob scaling with B is weaker.

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