Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

**Modification of intermittency with sheared flow in the Large Plasma Device**[1] GIOVANNI ROSSI, TROY CARTER, University of California, Los Angeles, DAVID SCHAFFNER, Swarthmore College, DANNY GUICE, University of California, Los Angeles, ROGER BENGTSON, University of Texas at Austin — Azimuthal flow and flow shear are controlled in the edge of the Large Plasma Device (LAPD) using a biasable limiter. Reduction of turbulent particle transport with increasing shearing rate is observed in LAPD.[2] Intermittency (as measured by skewness of the fluctuation amplitude PDF) increases with edge flow (in either direction) and reaches a minimum when spontaneous edge flow is reduced to near zero using biasing. This trend is counter to the observed changes in turbulent particle flux, which peaks at low flow/shear and decreases at high shear. Two-dimensional cross-conditional averaging confirms the intermittency to be associated with detached, filamentary structures ("blobs") with a clear dipolar potential structure and a geometry also dependent on the magnitude of sheared flow. The structures are born in the region of strong pressure gradient in the LAPD edge, with the birth rate and blob lifetime correlating with the strength of the gradient. More detailed measurements are made to connect the occurrence of these blobs to observed flow-driven coherent modes and their contribution to radial transport loss.

[1]This work was supported by the National Science Foundation (PHY-0903913).
[2]D.A. Schaffner *et. al.*, Phys. Rev. Lett. **109**, 135002 (2012).

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Date submitted: 12 Jul 2013 Electronic form version 1.4