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Convective Blobs in the Presence of Sheared Flows in a Magnetized Laboratory Plasma LINCAN YAN, MARK GILMORE, University of New Mexico, CHRISTOPHER WATTS, Univeristy of New Mexico — Intermittent convective plasma transport across magnetic field lines, so called "blobs" has been one of the most important issues in fusion-related edge plasma physics, and is thought to play a key role for cross-field plasma transport in the tokamak scrape-off layer. Experiments have shown evidence of "blobby" plasma transport, in which intermittent bursts of fluctuations in ion saturation currents measured by Langmuir probes were analyzed. To investigate the details of how this transport interacts with plasma flows, experiments are being conducted in both the LArge Plasma Device (LAPD) and HELicon-CAThode (HELCAT). HELCAT is a linear device at UNM measuring 4 m in length, 50 cm in diameter, with B $<$ 0.22 T. It can operate two sources simultaneously, both RF helicon and cathode plasmas, with peak helicon-produced densities, n $\sim 10^{13}$ cc and cathode-produced densities, n $\sim 10^{12}$ cc. Sheared ExB flows, generated via biased concentric rings, are utilized to modify the flow profile. Fluctuations and flux are monitored with probe arrays are measured by a Mach probe. Blobs are observed at both LAPD and HELCAT cathode plasma. No blobs have been found in HELCAT helicon plasmas so far. It is also found that strong shear flow exists at the plasmas edge in LAPD. Experimental and analysis results will be presented.

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