

Abstract Submitted  
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**Effect of sheared flows on different gas species in a magnetized plasma column**<sup>1</sup> ASHLEY EADON, AMI DUBOIS, EDWARD THOMAS, Auburn University — Transverse and parallel sheared flows are important topics in both space and fusion plasmas, and have been the subjects of extensive study. In an effort to understand the plasma response to these flows across a large parameter space, a series of coordinated multi-scale experiments is being performed on three different devices that span the space (Space Plasma Simulation Chamber, SPSC) to fusion (Compact Toroidal Hybrid, CTH stellarator) regimes. The Auburn Linear EXperiment for Instability Studies (ALEXIS) is a 170 cm long, 10 cm diameter linear magnetized, rf generated plasma column, and acts as the “bridge” between the space and fusion devices. Multiple gas species (He, N, Ar) are being evaluated to determine the ideal combination of gas, magnetic field strength, and imposed electric potential structure to best study the plasma response to sheared flows of many different scale sizes. Measurements will be presented on the correlation between different low frequency wave features and the electric field structure in the plasma.

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