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Potential and flow modification in a linear magnetized plasma column¹ 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. The scale size of space plasmas, and high temperatures of fusion plasmas, provide unique diagnostic challenges. Small scale laboratory experiments are often more flexible and provide easier diagnostic access than other plasma environments. The Auburn Linear Experiment for Instability Studies (ALEXIS) is a 170 cm long, 10 cm diameter, linear magnetized, rf generated plasma column, which, in addition to existing Langmuir and emissive probes, has recently been outfitted with a Laser Induced Fluorescence system. Recent experiments have focused on modifying the plasma potential and characterizing the plasma response. Initial results indicate that modification of the radial electric field results in modification of both the azimuthal and radial ion flows. Measurements will be presented on the correlation between different low frequency wave features and the electric field, density, and flow structures in the plasma.

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