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Laboratory Investigations of Electromagnetic Shear-Driven Instabilities[1] ERIK TEJERO, SFA, Inc and Auburn University, BILL AMATUCCI, GURU GANGULI, Naval Research Laboratory, EDWARD THOMAS, Auburn University — Observations of low frequency, electromagnetic ion cyclotron waves have been made in many regions of the space environment. These waves are thought to be generated by an electron beam-driven instability, but problems have arisen when trying to match observations with theory. Sheared flows produced by localized electric fields coupled with a perpendicular magnetic field are a potentially important energy source that can create waves of this type. In situ observations have led to a laboratory effort to investigate the impact of electromagnetic, velocity shear-driven instabilities on the near-Earth space plasma dynamics. Preliminary results from experiments on the Space Physics Simulation Chamber at NRL are presented.

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