

Abstract Submitted
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Laboratory Studies of Electromagnetic Velocity Shear-Driven Instabilities ERIK TEJERO, Global Strategies Group (NA), Inc. and Auburn University, WILLIAM AMATUCCI, GURUDAS 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. Many theoretical mechanisms have been presented to account for these waves and the resulting transversely accelerated ions. 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 of sheared plasma flows collocated with electromagnetic wave activity have led to a laboratory effort to investigate the impact of electromagnetic, velocity shear-driven instabilities on the near-Earth space plasma dynamics. Under scaled ionospheric conditions in the NRL Space Physics Simulation Chamber, the transition from electrostatic to electromagnetic ion cyclotron wave propagation is being investigated. Results from experiments to characterize instability threshold and wave dispersion characteristics will be presented. Work supported by the Office of Naval Research.

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