

Abstract Submitted
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Alfvén wave Measurements in Helium using the HelCat Device at UNM¹ RALPH KELLY, University of New Mexico, CHRISTOPHER WATTS, YUE ZHANG, RICH COMPEAU, MARK GILMORE, ALAN G. LYNN, University of New Mexico — Research is being conducted at UNM to verify the theoretical relationship between Alfvén waves and neutral density in Helium plasmas. We are particularly interested in the role collisionality plays in wave damping and mode structure development. The non-axisymmetric waves are launched using a hand wound emitter coil driven by a differential current amplifier circuit. The receiver consists of a hand wound B-dot coil and an amplifier circuit. Construction of the emitter, driver circuit, detector, and amplifier circuit is described. The plasma is generated using the helicon source of the HelCat plasma device at UNM. HelCat is a 4 meter long, 50 cm diameter machine with a helicon source on one end and hot cathode source on the other. Initial data indicating the presence of Alfvén waves in Helium plasma is presented.

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