

Abstract Submitted
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Experimental study of the transition between the naturally occurring and driven modes of the dust acoustic wave¹ STEVEN LA COUNT, JEREMIAH WILLIAMS, Wittenberg University — A dusty plasma consists of ions, electrons, neutral particles, and charged microparticles. The presence of the charged microparticles gives rise to new plasma phenomena, including collective modes such as the dust acoustic wave. The dust acoustic wave is a naturally occurring, low frequency compressional wave mode that propagates through the dust component. It has been the subject of intense experimental and theoretical study since being predicted in 1990 and identified experimentally in 1994. In this work, a time-resolved Hilbert Transform is applied to high speed video imaging of the wave mode to examine the transition between the driven and naturally occurring dust acoustic wave in a weakly coupled, argon dc glow plasma over a range of neutral gas pressures.

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Jeremiah Williams
Wittenberg University

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