

Abstract Submitted  
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**Measurements of Finite Dust Temperature Effects in the Dispersion Relation of the Dust Acoustic Wave** ERICA SNIPES, JEREMIAH WILLIAMS, Wittenberg University — A dusty plasma is a four-component system composed of ions, electrons, neutral particles and charged microparticles. The presence of these charged microparticles gives rise to new plasma wave modes, including the dust acoustic wave. Recent measurements [1, 2] of the dispersion relationship for the dust acoustic wave in a glow discharge have shown that finite temperature effects are observed at higher values of neutral pressure. Other work [3] has shown that these effects are not observed at lower values of neutral pressure. We present the results of ongoing work examining finite temperature effects in the dispersion relation as a function of neutral pressure.

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- [2] J. D. Williams, E. Thomas Jr., and L. Marcus, *Phys. Plasmas* 15, 043704 (2008).
- [3] T. Trottenberg, D. Block, and A. Piel, *Phys. Plasmas* 13, 042105 (2006).

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