

Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Preliminary measurements of thermal effects in the dust acoustic wave JEREMIAH WILLIAMS, Wittenberg University — A complex (dusty) plasma (CDP) is a four-component system composed of ions, electrons, neutral particles and charged microparticles. The presence of the microparticles gives rise to new plasma phenomena, including collective modes such as the dust acoustic wave. Recent measurements of the dispersion relationship of this wave mode [E. Thomas, Jr., *et. al.*, Phys. Plasmas 14, 123701 (2007), J.D. Williams, *et. al.*, Phys. Plasmas 15, 043704 (2008)] have shown that, over a range of neutral gas pressures, it is necessary to include thermal effects to accurately fit the measured dispersion relations. In this work, initial measurements of the dispersion relation in a new dusty plasma experiment, the Wittenberg University DUsty Plasma Experiment (WUDUPE), will be presented. In particular, the dependence of the kinetic dust temperature on the neutral gas pressure will be presented.

Jeremiah Williams
Wittenberg University

Date submitted: 17 Jul 2009

Electronic form version 1.4