

Abstract Submitted  
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**Using a segmented electrode to control a dusty plasma**<sup>1</sup> ZACHARY ALDEWERELD, JEREMIAH WILLIAMS, EDWARD THOMAS, Auburn University — Dusty plasmas are four component plasmas consisting of ions, electrons, neutrals, and charged microparticles. The charged microparticles (i.e., the dust) are trapped and suspended by potential wells in the plasma. In this experiment, a segmented electrode is being developed to dynamically control the dust particles in the plasma. Circuits are being designed to receive known signals and amplify them. These signals can then be delivered to the electrodes inside a chamber in order to create potential wells to trap the dust. These potentials can be modified in real time to allow controlled interactions among the dust particles. The entire system is controlled using LabVIEW. To make it more versatile, all components necessary to run the system are rack-mounted including a computer, the power supplies, the circuits, and plug panels through which the circuits can be connected to power, inputs, and outputs. Preliminary results will be presented at this conference.

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