

Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Sorting Category: 1.3.6 (E)

Particle transport in a dc glow discharge dusty plasma with two particle size distributions¹ JOHN MCKEE, EDWARD THOMAS, Auburn University — Recent experiments performed on the Auburn Complex Plasma Experiment (A-COMPLEX) have shown a tendency for the dust cloud, suspended in an argon dc glow discharge plasma, to self-organize into an ordered structure with multiple internal boundaries. At these internal boundaries, there is a clear change in the microparticle transport. Initial investigations suggest that the mechanism behind the dust cloud self-ordering is the mass distribution of the silica particles that comprise the cloud. To test this, a new experiment involving two dust particle distributions, 10 micron and 40 micron diameter silica particles, is performed in the A-COMPLEX device to create distinct microparticle populations within the suspended dust cloud. Two-dimensional Particle Image Velocimetry (PIV) techniques will be used to characterize the particle transport. Measurements will be presented on the internal transport of the microparticle in this system.

¹This work is supported by National Science Foundation Grant PHY-0354938.

Prefer Oral Session
 Prefer Poster Session

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Date submitted: 21 Jul 2006

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