

Abstract Submitted
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Analysis of Supersonic Dust particles in Complex Plasmas

WILLIAM THEISEN, Ohio Northern University — Dust particles traveling at supersonic velocities were detected. Stable systems containing one, two and three supersonic particles were studied. The particles traveled below a two dimensional Coulomb crystal consisting of electrically charged microspheres. The strongly-coupled dusty plasma disk was arranged in a hexagonal lattice in a horizontal plane and levitated in a parabolic potential well. Trajectory plots and speed distribution charts of the supersonic particles indicate non Levy flight characteristics. The speed distribution of the particles is non Maxwellian and increases quadratically with a sharp cutoff.

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