

Abstract Submitted
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Using particle image velocimetry (PIV) measurements adapted from high speed imaging for ground-based, microgravity, and magnetized dusty plasmas¹ M. KRETSCHMER, T. ANTONOVA, Max Planck Institute for Extraterrestrial Physics, E. THOMAS, Auburn University, J. WILLIAMS, Wittenberg University, U. KONOPKA, Auburn University, P. BADYOPADHYAY, G.E. MORFILL, Max Planck Institute for Extraterrestrial Physics — For over a decade, particle image velocimetry (PIV) techniques have been used to make measurements of microparticle transport, waves, and velocity distributions in dusty (complex) plasmas. With the increasing availability and usage of the high speed imaging techniques and continuing improvement in the PIV analysis algorithms, it is now possible to apply PIV analysis techniques to a wide variety of experimental systems. However, it remains critical to perform careful spatial calibrations and to understand the operational limits under which PIV can be applied. This presentation will discuss the application of two-dimensional PIV measurements to four different experimental dusty plasma setups: ground-based tests of the PK-4 experiment, parabolic flight measurements on PlasmaLab, ground-based tests of micro-DPX, and measurements of a magnetized dusty plasma.

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