

Abstract Submitted  
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**Applying PIV analysis techniques to complex plasmas: reduced gravity and phase transition experiments**<sup>1</sup> C. RÄTH, MPE, E. THOMAS, Auburn University, J. WILLIAMS, Wittenberg University, M. THOMA, S. MITIC, L. COUEDEL, H. THOMAS, M. CHAUDHARI, MPE — Particle image velocimetry (PIV) techniques have been applied to studies of complex (dusty) plasmas for over a decade. In these previous investigations, measurements were performed using specialized hardware configured specifically for PIV. However, with the increasing use of higher speed video imaging, i.e., in excess of 100 frames per second, it is possible to apply PIV analysis techniques directly to video data. This presentation will discuss techniques used to benchmark and validate the use of PIV in this manner. Then, it will describe recent applications of PIV to reduced gravity and phase transition measurements in complex plasmas. It is shown that PIV can reveal detailed information on particle flows and waves in these systems.

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