

Abstract Submitted  
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**A Novel 3 Dimension 3 Component Micro-PIV System** CRAIG SNOEYINK, Purdue University, STEVEN WERELEY — We present a novel 3-dimension 3-component micro-PTV system which relies on a single view. This technique uses an axicon to determine the wavefront of a particle imaged by a microscope objective. The pattern produced by the axicon, a Bessel function of the first kind, is dependent on the three-dimensional location of the particle. A Hankel transform is used to characterize the patterns produced, making this particularly robust with respect to high particle loading. Once the particle coordinates are known for pairs of images, traditional PTV techniques are used to determine the velocity vectors.

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