

Abstract Submitted
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Application of a 3D Defocusing Particle Image Velocimetry System to a Virtual Impactor for Microscopic Aerosol Particles¹ ALVARO PANTIGOSO, WEI-HSIN TIEN, DANA DABIRI, University of Washington — A Defocusing Digital Particle Image Velocimetry (DDPIV) system is used to observe near-wall effects and flow instabilities within a virtual impactor section of an aerodynamic lens concentrator used to concentrate microscopic aerosol particles. The aerodynamic lens concentrator uses air as its main carrier gas which it draws from a small vacuum system. The DDPIV set up includes a 200mm close-up lens and a double pulsed laser used to backlight the field of view. The image volume is 1.76mmx1.32mmx1.83mm. A three-dimensional velocity field is extracted and the results are compared with preliminary CFD findings.

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