

Abstract Submitted  
for the DFD15 Meeting of  
The American Physical Society

**Shear velocity and wall position determination from particle image velocimetry data with seed centroid correction** JEFF HARRIS, Pennsylvania State Univ, BLAKE LANCE, Utah State University, RICHARD SKIFTON, University of Idaho, BARTON SMITH, Utah State University — Two methods of computing the wall shear velocity from high-resolution particle image velocimetry (PIV) measurements are compared with and without a correction that accounts for seed gradient near the wall. It is crucial to know the wall position when computing the wall shear stress, but this can be difficult due to laser scatter on a wall. Furthermore, PIV is well known to be biased near walls due to seeding gradients. We compensate for these effects by replacing the cross-stream location of each vector with a value based on the centroid of the seeding in each interrogation region. The shear velocity and wall position resulting from methods outlined in the literature are presented. The boundary layer cases presented are influenced by buoyancy and the efficacy of these methods for convective flow will be discussed.

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Date submitted: 31 Jul 2015

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