

Abstract Submitted  
for the DFD11 Meeting of  
The American Physical Society

**Flow around the tip of a circular cylinder in proximity with a channel bottom wall** CHRISTOPHER HOCUT<sup>1</sup>, University of Notre Dame, RALPH BUDWIG<sup>2</sup>, University of Idaho — Measurement probes create a region of disturbed flow in the vicinity of the probe tip. The present investigation examined the disturbance due to an idealized probe (a circular cylinder) that penetrated the free surface of an open channel flow as well as potential interactions of the disturbance with the channel bottom. Stereoscopic particle image velocimetry (PIV) was used to measure the three components of velocity in the vertical plane of symmetry downstream the cylinder with the tip of the cylinder located zero to four diameters from the channel bottom. The disturbance characteristics (change in velocity and turbulence quantities), vertical distance to the extent of disturbance as measured from cylinder tip, and downstream distance to the point of maximum disturbance have been determined. The cylinder tip depth that caused interaction with the channel bottom leading to onset of scour was also investigated.

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Date submitted: 26 Jul 2011

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