Abstract Submitted
for the DFD10 Meeting of
The American Physical Society

Measurement Techniques: Viscosity and Surface Drag in Quasi-Two-Dimensional Flows[1] EDWARD C. TITMUS, ADRIAN T. KIRN, PAUL W. FONTANA[2], Seattle University — The effects of kinematic viscosity and linear drag are both significant in many quasi-two-dimensional (Q2D) flows in nature and the laboratory. These effects, however, are difficult to measure and to distinguish from one another. We demonstrate precise, independent measurement of both kinematic viscosity and linear drag using decay rates of vortices of varying scales in a Q2D experiment involving soap films in a circular Couette cell. As expected, we have found both the kinematic viscosity and the linear drag to depend inversely on film thickness. The approach can be generalized to apply to other configurations and experiments.

[1]Supported by Seattle University, the National Science Foundation under Grant No. CBET-0854509, and the M. J. Murdock Charitable Trust.
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Date submitted: 07 Aug 2010 Electronic form version 1.4