

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Viscosity and surface drag in quasi-two-dimensional flows¹ EDWARD C. TITMUS, ADRIAN T. KIRN, PAUL W. FONTANA², Seattle University — Seattle University – The effects of kinematic viscosity and surface drag are both significant factors in many experimental and natural quasi-two-dimensional (Q-2D) flows. These effects, however, are difficult to distinguish from one another. In a Q-2D experiment involving soap films in a circular Couette cell, we demonstrate precise independent measurement of both kinematic viscosity and surface drag as a function of film thickness using decay rates of vortices of varying scales. As theoretically expected, we have found both the kinematic viscosity and the surface drag to depend inversely on film thickness. This result allows quantitative experimentation in the realm of stability theory in basic Q-2D flows.

¹Supported 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: 20 Nov 2009

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