

Abstract Submitted
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Transition to Turbulence in the Infrared - Revisited RICHARD LEIGHTON, SRI International, GEOFFREY B. SMITH, Naval Research Laboratory — A serendipitous observation of the transition to turbulence of a wind driven free-surface at the University of Delaware Air-Sea Interaction Laboratory led the 1998 'Gallery of Fluid Motion: Transition to turbulence in the infrared'. This transition, via the formation of Langmuir cells is being examined numerically. Simulations are performed of a strongly shear driven air-water interface, modeled as a flat interface with a specified Stokes drift and a constant heat flux cooling the interface. The simulations are initialized with a weak random flow field and allowed to evolve under the influence of constant shear and heat flux. Like the original experiment, the flow is slow to setup, but transition occurs quickly. The scaling and energetics will be discussed.

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