Abstract Submitted for the DFD10 Meeting of The American Physical Society

The Dynamics of Droplets and Holes in Thin Surfactant Films KAREN DANIELS, NC State University, KALI ALLISON, Harvey Mudd College, JONATHAN CLARIDGE, University of Washington, RACHEL LEVY, Harvey Mudd College, ELLEN PETERSON, MICHAEL SHEARER, NC State University, WYNN VONNEGUT, JEFFREY WONG, Harvey Mudd College — We perform quantitative measurements of the spreading of an insoluble surfactant on a thin layer of glycerin, starting from either a droplet or hole (anti-droplet) configuration. We make direct measurements of both the radial height profile and the spatial distribution of the fluorescently-tagged surfactant during the spreading process. Remarkably, the surfactant dynamics are quite different for the two cases. We compare these experimental results to numerical solutions using lubrication theory for thin films.

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Date submitted: 06 Aug 2010 Electronic form version 1.4