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Micropancake Growth JAMES SEDDON, OLESYA BLIZNYUK, STEFAN KOOLIJ, HAROLD ZANDVLIET, BENE POELSEMA, DETLEF LOHSE, University of Twente — Micropancakes are thin fluidic layers that form at the interface between a hydrophobic substrate and bulk liquid. To date, details of how they differ from the bulk liquid has been the subject of speculation. The current consensus is that they are gaseous, with typical heights of 1-2nm and lateral extents of microns. Here we present results of an experimental investigation into the dynamics of micropancakes. Atomic force microscopy is used to firstly confirm the existence of micropancakes before monitoring long-time effects. We find that the micropancakes grow laterally with time, thus tending to reduce the area of contact between the bulk liquid and substrate. The growth is initially directional, mediated by substrate pinning, however a surprising transition from this growth behaviour to pancake rearrangement then occurs.

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