

1100-35-30

Patrick Guidotti* (gpatrick@math.uci.edu), 340 Rowland Hall, Department of Mathematics, University of California at Irvine, Irvine, CA 92697-3875. *Equilibria and their stability for a quasi-stationary droplet model.*

A classical fluid dynamics model is considered for the contact angle evolution of a viscous droplet on a homogeneous substrate. Mathematically it takes the form of a moving boundary problem. It is shown that the evolution is globally well-posed in the vicinity of the manifold of equilibria and that solutions, starting close to the manifold, converge exponentially back to a specific equilibrium on it. The proposed approach is direct, explicit, and relies on the choice of a convenient "natural" coordinate system in the "space of shapes" for the domain evolution which yields a particularly simple normal form. (Received January 15, 2014)