

1011-35-373

Daniel Coutand and **Steve Shkoller*** (shkoller@math.ucdavis.edu), Department of Mathematics, University of California at Davis, Davis, CA 95616. *Free Boundary Euler Equations with Surface Tension.*

We study the motion of an incompressible ideal fluid with free boundary. The surface of the fluid moves with the fluid velocity and the velocity is itself controlled by the shape of the free surface. Such a motion is modeled by the Euler equations set on the moving domain with pressure a constant multiple of the mean curvature of the boundary. We prove that this problem is well-posed in Sobolev spaces. (Received August 30, 2005)