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James P Kelliher* (kelliher@math.ucr.edu), University of California, Riverside, Department of Mathematics, Surge 253, 900 University Avenue, Riverside, CA 92521. *Vanishing viscosity and the accumulation of vorticity on the boundary.*

We say that the vanishing viscosity limit holds in the classical sense if the velocity for a solution to the Navier-Stokes equations converges in the energy norm uniformly in time to the velocity for a solution to the Euler equations as the viscosity vanishes. I will show that, for a bounded domain in dimension 2 or higher, the vanishing viscosity limit holds in the classical sense if and only if a vortex sheet forms on the boundary. (Received March 02, 2009)