

Anna Mazzucato, Penn State University

Vanishing Viscosity Limits and Singular Perturbation Problems

ABSTRACT:

We study the vanishing viscosity limit for certain Taylor-Couette flows in pipes and channels. We establish convergence of the Navier-Stokes solution to the corresponding Euler solution as viscosity vanishes in various norms. In the process we obtain a detailed analysis of the small-diffusion limit for a heat equation with drift, using a parametrix construction. This is joint work with Michael Taylor (UNC).