

1121-37-18

Kelly McQuighan* (kmcquigh@bu.edu) and **Gene Wayne**. *Towards metastability in the Burgers equation with periodic boundary conditions.*

Roughly speaking, metastable solutions capture transient behavior which persists for long times. Recent work on Burgers equation on the real line and on Navier-Stokes equation with periodic boundary conditions have provided some insight into various mechanisms for metastability. In this talk we discuss a candidate metastable solution for the viscous Burgers equation with periodic boundary conditions. We construct the “frozen-time” spectrum for this solution using ideas from singular perturbation and Melnikov theory. Finally, we indicate future directions in which this spectrum can be used to understand metastability for the full PDE. (Received June 22, 2016)