

1033-34-144

Kevin Zumbrun*, Department of Mathematics, Indiana University, Bloomington, IN 47401.

Numerical determination of stability of viscous shock waves.

In previous work, we have reduced the study of nonlinear stability and bifurcation of viscous shock waves to determination of spectral information, an ODE problem that can be attacked by a variety of methods both analytical and numerical. In this talk, we focus on practical aspects of numerical testing of stability of viscous shock and detonation waves, and give applications to specific systems of physical interest, both separately and in conjunction with energy estimates and methods from asymptotic ODE. (Received September 08, 2007)