

1010-35-89

Michael V. Klibanov* (mklibanv@email.uncc.edu), Department of Mathematics and Statistics, The University of North Carolina, at Charlotte, Charlotte, NC 28223. *Uniqueness, Stability and Numerical Methods for Some Coefficient Inverse and Ill-Posed Cauchy Problems.*

In this talk I will present some results about Lipschitz stability of both hyperbolic Cauchy problems with lateral data and coefficient inverse problems. I will show how the experimentally observed phenomenon of refocusing of time reversed wave fields can be rigorously explained. I will also discuss a globally convergent numerical method for coefficient inverse problems called "convexification". Some numerical results will be presented. (Received August 21, 2005)