<u>Computational Boundary Control Methods for Acoustic Inverse Boundary Value Problems</u>

Yang YANG

Department of Computational Mathematics Science and Engineering, Michigan State University, USA

Email: yangy5@msu.edu

We consider the acoustic inverse boundary value problem of recovering a sound speed/potential from near field data represented by the Neumann-to-Dirichlet map. We develop linearized boundary control methods to analyze the stability and reconstruction of the unknowns. The analysis leads to reconstructive algorithms that are validated in 1D. This is joint work with Lauri Oksanen (University of Helsinki) and Tianyu Yang (Michigan State University).