A Lipschitz stable reconstruction formula for the wave speed from boundary measurements

Shitao Liu, University of Helsinki

shitao.liu@helsinki.fi

In this talk we consider the problem to reconstruct a wave speed in a domain $M from acoustic boundary measurements modeled by the hyperbolic Dirichlet-to-Neumann map. We introduce a reconstruction formula that is based on the Boundary Control method and incorporates features also from the complex geometric optics solutions approach. Moreover, we show that the reconstruction formula is locally Lipschitz stable for a low frequency component of the wave speed under suitable geometrical and controllability assumptions.