Optimal parametrizations in severely ill posed inverse problems

L. Borcea, *Rice University, USA*

Abstract

In severely ill posed inverse problems, such as electrical impedance tomography, having proper parametrizations of the unknown is very important for achieving stable reconstructions. I will discuss our approach to parametrization, on so called optimal grids. These grids are adaptive, in the sense that they capture automatically the loss of resolution away from the surface of measurements and they allow stable reconstructions, without any additional regularization. I will present some recent results on inversion on optimal grids, including two-dimensional reconstructions with noisy data.