Lingyun Qiu* (qiu@purdue.edu), Elena Beretta and Maarten de Hoop. Lipschitz stability of an inverse problem for a Schrödinger type equation.

Consider the inverse problem of determining the potential $q$ from the Neumann-to-Dirichlet map $\Lambda_q$ of a Schrödinger type equation

$$\begin{aligned}-(\Delta + q)u &= 0, \quad \text{in } \Omega \\
u &= g, \quad \text{on } \partial \Omega.\end{aligned}$$

A relevant question, specially in applications, is the stability of the inversion. In this work, a Lipschitz type stability is established assuming a priori that $q$ is piecewise constant with a bounded know number of unknown values. (Received September 15, 2011)