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John V Matthews* (Matt-Matthews@utc.edu), 615 McCallie Ave, Dept 6956, Chattanooga, TN 37403, and **Boris Belinskiy**. *A Local Approach for an Inverse Problem on a Semi-Axis*.

We use a boundary control approach to recover an unknown potential for the wave equation on a semi-axis. Both spectral and dynamical methods are considered to produce data from the forward problem, and we use local Krein and Gelfand-Levitan approaches to solve the inverse problem. Corresponding numerical algorithms were implemented to demonstrate the efficacy of our approach with numerous computational examples. (Received September 13, 2011)