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Julian Edward* (edwardj@fiu.edu), Department of Mathematics, Florida International University, Miami, FL 33199, and **Nina Avdonina**, Department of Mathematics, University of Alaska at Fairbanks, Fairbanks, AK. *Inverse problem for networks of strings with attached masses.*

We consider the inverse problem of a non-homogeneous string with a mass attached. Suppose one is given as data the dynamical Dirichlet to Neumann map for a sufficiently large time interval. The boundary control method is adapted to use this data to determine the length of the string, the mass and its location, and the density function of the string. The method is then extended to trees-like networks of strings with masses located at the nodes. An application to biology is also discussed. (Received January 23, 2014)