

1125-35-1031      **Sergei Avdonin\*** (s.avdonin@alaska.edu), 2534 Bridlewood Lane, Atlanta, GA 30339, and  
**Fadhed Al-Musallam.** *Inverse Problems for Krein's String.*

We consider boundary inverse problems for a nonhomogeneous string with masses attached to some interior points. We demonstrate that the density of the string, masses and their coordinates can be recovered using the dynamical or spectral Neumann-to-Dirichlet map associated to a boundary point of the string. Our identification algorithm is based on the exact controllability of the string in a sharp time interval with respect to a nonsymmetric Sobolev space with the regularity increasing at each 'mass' point. (Received September 14, 2016)