1010-49-18   **Slava Krigman*** (`krigman@ll.mit.edu`), MIT / Lincoln Laboratory, 244 Wood Street, Lexington, MA 02420. *Reconstruction problem for the inhomogeneous one dimensional wave equation.* Preliminary report.

In this presentation we consider question of reconstruction of spatial distribution of the forcing term in the inhomogeneous string equation based on the observation of normal derivatives of transversal deflections of the string at one end. We present reconstruction formula, given in terms of root vectors of the operator corresponding to the string equation. The uniqueness of the reconstruction will then be established from results of works by M. Shubov and others on the controllability of the damped string. Some computational results demonstrating these techniques will also be presented. (Received June 29, 2005)