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**Roberto Triggiani\*** (rt7u@virginia.edu), University of Virginia, Department of Mathematics, P. O. Box 400137, Charlottesville, VA 22904-4137. *Global uniqueness and stability in inverse problems for second order hyperbolic equations with a non-homogeneous Neumann boundary term.*

We provide a global uniqueness and stability result in determining, in one shot, both the damping coefficient and the potential coefficient of an inverse hyperbolic problem with non-homogeneous Neumann term, through the measurement of an additional Dirichlet boundary trace over an explicit portion of the boundary and over a close to optimal, computable time interval. Key ingredients of the proof from past joint work of the author include: (i) sharp and very general Carleman estimates for second order hyperbolic equations; (iii) a correspondingly implied Continuous Observability Inequality; (ii) Sharp/optimal interior and boundary regularity theory of second order hyperbolic equations with Neumann boundary datum. This is joint work with Shitao Liu, Uva. Relations between inverse problems and control theory problems will also be unveiled. (Received September 14, 2010)