1067-35-594 **Irena Lasiecka*** (il2v@virginia.edu), Department of Mathematics, University of Virginia, Charlottesville, VA 22901, and **Shitao Liu** (sl3fa@virginia.edu), Department of mathematics, University of Virginia, Charlottesville, VA 22901. *Recovering a source from the measurments of acceleration of wall vibrations in structural acoustic problems.*

The PDE model consists of wave equation coupled to plate equation with the coupling occuring at the interface-manifold of lower dimension.

The source is being reconstructed from the measurments of acceleration of elastic wall, the latter modeled by plate equation.

The measurments are taken on the interface- separating acoustic environment and the elastic wall.

Both uniqueness of reconstruction and stability estimates are established.

The proofs are based on recently developed Carleman's estimates applicable to Neumann unobserved boundaries along with sharp trace regularity results available for wave equations. (Received September 10, 2010)