1067-35-596 **Irena Lasiecka*** (il2v@virginia.edu), Department of Mathematics, University of Virginia, Charlottesville, VA , and **Philip Graber** (pjg9g@virginia.edu), Department of mathematics, University of Virginia, Charlottesville, VA 22901. *Generation of dynamical flow and long time behavior of solutions to wave equation with acoustic boundary conditions.*

Wave equation with nonlinear acoustic boundary conditions is considered. This particular model arises in the context of modeling acoustic pressure in a chamber equipped with porous walls. It is shown that the resulting coupled system generates a well-posed semiflow defined by a continuous semigroup acting on a finite energy space. This result dispels previous conjectures made in the literature which suggest a nonexistence of a semigroup associated with weak solutions.

In addition, long time behavior os solutions is discussed. Both strong and uniform stability are established under suitable geometric conditions. (Received September 10, 2010)