

**SEMINAR**  
**CENTER FOR APPLIED MATHEMATICS AND SCIENCE**  
**DEPARTMENT OF MATHEMATICS**  
**UNIVERSITY OF WEST GEORGIA**

**2:00 PM, WEDNESDAY, JANUARY 15, 2014, BOYD 306**

**Speaker: Dr. Amin Boumenir, Department of Mathematics, UWG**

**Title: THE RECOVERY OF THE ACOUSTIC STIFFNESS COEFFICIENT**

**Abstract: .**

We are concerned with the reconstruction of a non-differentiable acoustic stiffness reactance coefficient of a one dimensional hyperbolic equation using the smallest possible number of boundary readings generated by classical initial conditions. To this end a complete set of spectral data of a string is extracted from either a single or at most two readings of the trace of the solution on the boundary. The sought coefficient is then uniquely recovered by M.G. Krein inverse spectral theory. Applications of the method are in noninvasive medical imaging as the coefficient helps map the various tissue densities in a body.

This is a joint work with Dr. Fadhel Al-Musallam.

All are welcome.