

*Department of Mathematics and Statistics*  
*Colloquium Lecture Series*

*Vasil Godabrelidze*  
*UAF*

**Methods of Boundary Control Theory in the  
Non-stationary Inverse Problem for the Wave  
Equation**

Many physical processes are described by partial differential equations and systems of partial differential equations. The coefficients of these equations, which may depend on spatial and time variables, describe the properties of the medium where these processes take place. Solutions of these equations are called fields. The so-called direct problem consists of finding these fields when we know applied sources, initial and boundary conditions and, of course, parameters of the medium. However, in physics and practical applications, the problem under consideration is often somewhat opposite. It is the unknown properties of the medium, described by the coefficients of the differential equations, that are to be determined. This project is about using boundary control methods in the non-stationary inverse problem. In particular the dynamic problem is to recover a potential in the wave equation via the response operator using boundary observations.

*(Note special day and time)*

**Tuesday, May 6, 2008**

*Chapman 106*

**3:00 – 4:00 pm**

*Refreshments after the talk in Chapman 101A*