1022-35-94 **Bing-Yu Zhang*** (`bzhang@math.uc.edu`), Department of Mathematical Sciences, University of Cincinnati, Cincinnati, OH 45221, and **Sorin Micu**, **Jaime H. Ortega** and **Lionel Rosier**. *Control and Stabilization of a Family of Boussinesq Systems.*

In this talk we discuss the internal controllability and stabilizability of a family of Boussinesq systems recently proposed by J. L. Bona, M. Chen and J.-C. Saut to describe the two-way propagation of small amplitude gravity waves on the surface of water in a canal. The space of the controllable data for the associated linear system is determined for all values of the four parameters. As an application of this exact controllability, some simple feedback controls are constructed such that the resulting closed-loop systems are exponentially stable. When the parameters are all different from zero, the local exact controllability and stabilizability of the nonlinear system will also be discussed. (Received September 10, 2006)