1057-35-378 **Bingyu Zhang*** (zhangb@ucmail.uc.edu), Department of Mathematical Sciences, University of Cincinnati, Cincinnati, OH 45221. *Control and Stabilization of the Nonlinear Schrödinger Equation on Rectangles.*

In this this talk, we will discuss the local exact controllability and the local stabilization of the semilinear Schrödinger equation posed on a product of n intervals ($n \geq 1$). Both internal and boundary controls are considered, and the results are given with periodic (resp. Dirichlet or Neumann) boundary conditions. In the case of internal control, we will present some local controllability results which are sharp as far as the localization of the control region and the smoothness of the state space are concerned. It will also be proved that for the linear Schrödinger equation with Dirichlet control, the exact controllability holds in $H^{-1}(\Omega)$) whenever the control region contains a neighborhood of a vertex.

The results reported in this talk are joint work with Lionel Rosier. (Received January 26, 2010)