1046-35-411   **Myoungjean Bae*** (`bae@math.wisc.edu`), UW-Madison, Department of Mathematics, 480 Lincoln Dr, Madison, WI 53706, and **Mikhail Feldman**. *Transonic shocks of multi-dimensional compressible flow through divergent nozzles with arbitrary cross-sections.*

In several recent works, the authors proved unique existence and stability of transonic flow with transonic shock for two dimensional Euler system in divergent nozzles when incoming supersonic flow and appropriate exit pressure are prescribed.

In this talk, I will present the same results for multidimensional potential flow through divergent nozzles with arbitrary cross-sections by introducing the non-isentropic potential flow system. Transonic flow governed by this system has a jump of entropy across a shock. I will explain why the non-isentropic potential flow model is necessary to obtain unique existence and stability of transonic shock of multidimensional potential flow in divergent nozzles, and main idea of this work. This is a joint work with Mikhail Feldman (Received September 01, 2008)