1096-35-1914 **Dhanapati Adhikari*** (dadhikari@marywood.edu), 2300 Adams Avenue, Scranton, PA 18509, and **Chongsheng Cao**, **Jiahong Wu** and **Xiaojing Xu**. *Small global solutions to the damped two-dimensional Boussinesq equations.*

The two-dimensional (2D) incompressible Euler equations have been thoroughly investigated and the resolution of the global (in time) existence and uniqueness issue is currently in a satisfactory status. In contrast, the global regularity problem concerning the 2D inviscid Boussinesq equations remains widely open. In an attempt to understand this problem, we examine the damped 2D Boussinesq equations and study how damping affects the regularity of solutions. Since the damping effect is insufficient in overcoming the difficulty due to the "vortex stretching", we seek unique global small solutions and the efforts have been mainly devoted to minimizing the smallness assumption. By positioning the solutions in a suitable functional setting (more precisely the homogeneous Besov space $\mathring{B}^1_{\infty,1}$), we are able to obtain a unique global solution under a minimal smallness assumption. (Received September 16, 2013)