Dhanapati Adhikari* (dadhikari@marywood.edu), Department of Mathematics, Marywood University, 2300 Adams Avenue, Scranton, PA 18509. Damped two-dimensional Boussinesq equations.

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. By positioning the solutions in a suitable functional setting, we are able to obtain a unique global solution under a minimal smallness assumption. This is a joint work with C. Cao, J. Wu and X. Xu. (Received January 24, 2014)