

1125-35-2401 **Dhanapati Adhikari*** (dadhikari@marywood.edu), Marywood Univeristy, 2300 Adams Avenue, Scranton, PA 18509. *On the global regularity of two-dimensional incompressible Boussinesq equations with mixed partial dissipation.*

The Boussinesq equations concerned here model geophysical flows such as atmospheric fronts and oceanic circulation. Mathematically the 2D Boussinesq equations serve as a lower dimensional model of the 3D hydrodynamics equations. In fact, the 2D Boussinesq equations retain some key features of the 3D Euler and Navier-Stokes equations such as the vortex stretching mechanism. The issue of global regularity of two-dimensional Boussinesq equations can be difficult when there is only partial dissipation or no dissipation at all. This talk presents a recent result on the global (in time) regularity of classical solutions of the 2D incompressible Boussinesq equations with mixed partial dissipation. (Received September 20, 2016)