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Jiahong Wu* (jiahong.wu@okstate.edu), 401 Mathematical Sciences, Department of Mathematics, Stillwater, OK 74078. *Stability and regularity results for the Boussinesq equations with partial dissipation.*

This talk presents recent work on the stability problem concerning several equilibrium solutions to the Boussinesq equations with partial dissipation. First, we describe the linear and nonlinear stability results on the hydrostatic equilibrium of the 2D Boussinesq equations with only velocity dissipation. The results are from a published paper with C. Doering, K. Zhao and X. Zheng, and a submitted manuscript with L. Tao, K. Zhao and X. Zheng. Second, we explain the work with L. Tao on the linear stability of the Couette flow for the 2D Boussinesq equations with only vertical dissipation. (Received January 23, 2019)