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Xiaojing Xu* (xjxu@bnu.edu.cn), School of Mathematical Sciences, Beijing Normal University, Beijing, 100875, Peoples Rep of China. *Local Existence and Blow-up Criterion of the 2-D Compressible Boussinesq Equations without Dissipation Terms.*

In this paper, we consider the local existence and a blow-up criterion for smooth solutions to the 2-D isentropic compressible Boussinesq equations, and obtain some new commutator estimates. In particular, we show that the time integral of the spatial maximum of gradient of velocity controls the breakdown of smooth solutions. (Received September 01, 2009)