1007-58-93   **Lei Ni***, Department of Mathematics, University of California, San Diego, La Jolla, CA 92093. *A parabolic relative volume comparison theorem.* Preliminary report.

We explore further the implication of Perelman's new ideas in the simpler case without Ricci flow. A little surprised, this also leads to some new results, which are also colsely related to the previous works of Cheeger-Yau and Li-Yau. If time allows we also would like to discuss an interpolation between the entropy formula of Perelman and a new matrix Li-Yau-Hamilton inequality for Ricci flow. (Received February 06, 2005)