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S. Zhang Qi*, Math. Dept., UC Riverside, Riverside, CA 92521. *Strong non-collapsing and uniform Sobolev inequalities for Ricci flow with surgeries.*

We prove a uniform Sobolev inequality for Ricci flow, which is independent of the number of surgeries. As an application, under less assumptions, a non-collapsing result stronger than Perelman's κ non-collapsing with surgery is derived. The proof is much shorter and seems more accessible. The result also improves some earlier ones where the Sobolev inequality depended on the number of surgeries.

Another application is a proof of the surgery version of Hamilton's little loop conjecture. The conjecture was proved by Perelman in the case without surgery. (Received February 15, 2008)