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Tao Jiang* (jiangt@muohio.edu), Department of Mathematics and Statistics, Miami University, Oxford, OH 45056. *Compact topological cliques in sparse graphs*. Preliminary report.

Let ϵ be any real number such that $0 < \epsilon < 1$. Answering a question of Paul Erdős, Kostochka and Pyber (1988) showed that for large n , every n -vertex graph with at least $4^{t^2}n^{1+\epsilon}$ edges contains a subdivision of K_t in which each edge of K_t is subdivided at most $c \log t/\epsilon$ times, where c is an absolute constant.

Here we prove a complementary (and in some sense stronger) result by eliminating the dependency on t . For each t and sufficiently large n , we show that every n -vertex graph with at least $a(t)n^{1+\epsilon}$ edges, where $a(t)$ is a constant depending on t , contains a subdivision of K_t in which each edge of K_t is subdivided at most $c \log(1/\epsilon)/\epsilon$ times, where c is an absolute constant. Note that the number of times each edge is subdivided depends only on ϵ and does not depend on t . (Received January 23, 2009)