1030-52-194   **Igor Pak***, Room 2-390, Department of Mathematics, MIT, 77 Mass Ave, Camrbidge, MA 02139.
Closed geodesics and quasi-geodesics on convex surfaces. Preliminary report.

The classical Poincaré conjecture states that every smooth convex body has at least three simple closed geodesics. This conjecture was intensely studies and was eventually resolved by Lyusternik and Schnirelmann in the late 1930s. The proof was later much simplified and other proofs were found. Unfortunately, all these proofs are technically involved, they are inherently non-discrete and in a certain sense ineffective. I will discuss a polyhedral version of this result and what can be done if one actually wants to construct a closed (quasi-) geodesics. (Received August 02, 2007)