

**Meeting:** 999, Nashville, Tennessee, SS 3A, Special Session on Index Theory and the Topology of Manifolds

999-22-83            **Lizhen Ji\*** (lji@umich.edu), Dept of Math, University of Michigan, Ann Arbor, MI 48109. *Large scale geometry of S-arithmetic groups and the integral Novikov conjectures*. Preliminary report.

The Novikov conjectures are closely related to the large scale geometry of the discrete groups. For example, if a finitely generated group has a finite classifying space and finite asymptotic dimension, then all integral Novikov conjectures hold for the group. We show that any torsion free arithmetic subgroup of a linear algebraic group defined over rational numbers satisfies these conditions. We also show that any torsion free geometrically finite group satisfies these conditions. They provide new examples for which the K-theoretic integral Novikov conjecture holds. Another aspect of large scale geometry concerns existence of some nice compactification of the universal covering of the classifying space, and we apply this approach to study the Novikov conjectures for S-arithmetic groups by constructing compactifications using the partial Borel-Serre compactification of symmetric spaces and the Borel-Serre compactification of Bruhat-Tits buildings. (Received August 11, 2004)