

1061-58-203

Xianzhe Dai*, Math, UCSB, Santa Barbara, CA 93106. *Analytic torsion and intersection R-torsion for manifolds with conical singularity*. Preliminary report.

The R-torsion, introduced by Reidemeister in 1935, is the first topological invariant that are not homotopy invariant. The analytic torsion is introduced by Ray-Singer in the '70s as an analytic analogue of R-torsion. The famous Ray-Singer conjecture says that these two are indeed equal on closed manifolds. The Ray-Singer conjecture was proved independently by Cheeger and Mueller in the late '70s. Now both the R-torsion and analytic torsion can be generalized to singular manifolds, at least for manifolds with conical singularity. It is thus an intriguing question whether and how the Ray-Singer conjecture generalize to this setting. We will discuss some of the recent work in this direction. (Received April 14, 2010)