

Heat content and torsion function in non-compact Riemannian manifolds

Michiel van den Berg (Bristol)

Abstract. We discuss the heat content of open sets in a complete, smooth, non-compact, m -dimensional Riemannian manifold M without boundary, where M satisfies a two-sided Li-Yau gaussian heat kernel bound. We show that the Dirichlet torsion function v_Ω for an open set $\Omega \subset M$ is bounded if and only if the spectrum of the Dirichlet Laplace Beltrami operator acting in $L^2(\Omega)$ is bounded away from 0. Joint work with Hiroaki Aikawa, Chubu University, and Jun Masamune, Hokkaido University.