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Isoperimetric inequalities based on integral norms of Ricci curvature. (English)

Zbl 0665.53041

Les processus stochastiques, Coll. Paul Lévy, Palaiseau/Fr. 1987, Astérisque 157-158, 191-216 (1988).

An isoperimetric inequality for domains in general Riemannian manifolds is obtained. A priori constants depend only on diameter and certain integral norms of the negative part of the Ricci curvature. This leads to estimates for eigenvalues of the Laplacian, for the heat kernel, and for the first Betti number of the manifold. Other interesting bounds are obtained for the Gromov-norm of homology classes of M .

For the entire collection see [Zbl 0649.00017].

Reviewer: [K.Grove](#)

MSC:

53C20 Global Riemannian geometry, including pinching

58J50 Spectral problems; spectral geometry; scattering theory on manifolds

Cited in **2** Reviews

Cited in **21** Documents

Keywords:

isoperimetric inequality; diameter; Ricci curvature; eigenvalues of the Laplacian; heat kernel; first Betti number; Gromov-norm