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**Nodal sets of eigenfunctions on Riemannian manifolds.** (English) Zbl 0659.58047  
*Invent. Math.* 93, No. 1, 161-183 (1988).

Let  $\Delta$  denote the Laplacian of a compact connected Riemannian manifold  $M$ . Suppose that  $F$  is a real eigenfunction of  $\Delta$  with eigenvalue  $\lambda$ . It is proved that  $F$  vanishes to at most order  $c\sqrt{\lambda}$ , for any point in  $M$ . The nodal set  $N$  of  $F$  is defined to be the set of points where  $F$  vanishes. If  $M$  is real analytic, upper and lower bounds are obtained for the  $n-1$ -dimensional Hausdorff measure of  $N$ . More specifically,  $c_1\sqrt{\lambda} \leq \mathcal{H}^{n-1}N \leq c_2\sqrt{\lambda}$ .

Reviewer: [H.Donnelly](#)

**MSC:**

[58J50](#) Spectral problems; spectral geometry; scattering theory on manifolds  
[53C20](#) Global Riemannian geometry, including pinching

Cited in **12** Reviews  
Cited in **134** Documents

**Keywords:**

Laplacian; eigenfunction; nodal set

**Full Text:** [DOI](#) [EuDML](#)

**References:**

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