

## On Nodal Lines of Neumann Eigenfunctions

Rami Atar, *Technion - Israel Institute of Technology*  
Krzysztof Burdzy, *University of Washington*

### Abstract

We present a new method for locating the nodal line of the second eigenfunction for the Neumann problem in a planar domain.

Full text: [PDF](#) | [PostScript](#)

Pages: 129-139

Published on: June 3, 2002

### Bibliography

1. R. Atar, Invariant wedges for a two-point reflecting Brownian motion and the "hot spots" problem, *Elect. J. of Probab.* 6, (2001) paper 18, 1-19. [Math Review article not available.](#)
2. R. Atar and K. Burdzy, On Neumann eigenfunctions in lip domains, (2002) preprint. [Math Review article not available.](#)
3. C. Bandle, *Isoperimetric Inequalities and Applications*, Monographs and Studies in Mathematics, 7. Pitman, Boston, Mass.-London, (1980). [Math Review link](#)
4. R. Banuelos and K. Burdzy, On the "hot spots" conjecture of J. Rauch, *J. Func. Anal.* 164, (1999) 1-33. [Math Review link](#)
5. R. Bass and K. Burdzy, Fiber Brownian motion and the "hot spots" problem, *Duke Math. J.* 105, (2000) 25-58. [Math Review article not available.](#)
6. R. Bass, K. Burdzy and Z.-Q. Chen, Uniqueness for reflecting Brownian motion in lip domains, (2002) preprint. [Math Review article not available.](#)
7. K. Burdzy and W. Kendall, Efficient Markovian couplings: examples and counterexamples, *Ann. Appl. Probab.* 10, (2000) 362-409. [Math Review link](#)
8. K. Burdzy and W. Werner, A counterexample to the "hot spots" conjecture, *Ann. Math.* 149, (1999) 309-317. [Math Review link](#)
9. D. Jerison, Locating the first nodal line in the Neumann problem. *Trans. Amer. Math. Soc.* 352, (2000) 2301-2317. [Math Review link](#)
10. D. Jerison and N. Nadirashvili, The "hot spots" conjecture for domains with two axes of symmetry, *J. Amer. Math. Soc.* 13, (2000) 741-772. [Math Review link](#)
11. B. Kawohl, *Rearrangements and Convexity of Level Sets in PDE*, Lecture Notes in Mathematics 1150, Springer, Berlin, (1985). [Math Review link](#)
12. P.-L. Lions and A.-S. Sznitman, Stochastic differential equations with reflecting boundary conditions, *Comm. Pure Appl. Math.* 37, (1984), 511-537. [Math Review link](#)
13. A. Melas, On the nodal line of the second eigenfunction of the Laplacian in  $R^2$ , *J. Differential Geom.* 35, (1992) 255-263. [Math Review link](#)
14. N.S. Nadirashvili, On the multiplicity of the eigenvalues of the Neumann problem, *Soviet Mathematics, Doklady*, 33, (1986) 281-282. [Math Review link](#)
15. N.S. Nadirashvili, Multiple eigenvalues of the Laplace operator, *Mathematics of the USSR, Sbornik*, 133-134, (1988) 225-238. [Math Review link](#)
16. M. Pascu, Scaling coupling of reflecting Brownian motions and the hot spots problem, *Trans. Amer. Math. Soc.* (2002) to appear. [Math Review article not available.](#)
17. M. Pinsky, The eigenvalues of an equilateral triangle, *SIAM J. Math. Anal.* 11, (1980) 819-827. [Math Review link](#)
18. M. Pinsky, Completeness of the eigenfunctions of the equilateral triangle, *SIAM J. Math. Anal.* 16, (1985) 848-851. [Math Review link](#)

### Research Support Tool

[Capture Cite](#)  
[View Metadata](#)  
[Printer Friendly](#)

▼ [Context](#)

[Author Address](#)

▼ [Action](#)

[Email Author](#)  
[Email Others](#)



[Home](#) | [Contents](#) | [Submissions, editors, etc.](#) | [Login](#) | [Search](#) | [EJP](#)

[Electronic Communications in Probability](#). ISSN: 1083-589X