

Ivrij, V. Ya.

**Second term of the spectral asymptotic expansion of the Laplace-Beltrami operator on manifolds with boundary.** (English) [Zbl 0453.35068](#)

Funct. Anal. Appl. 14, 98-106 (1980).

For a scan of this review see the [web version](#).

**MSC:**

- 35P20 Asymptotic distributions of eigenvalues in context of PDEs
- 58J50 Spectral problems; spectral geometry; scattering theory on manifolds
- 35J05 Laplace operator, Helmholtz equation (reduced wave equation), Poisson equation
- 35P99 Spectral theory and eigenvalue problems for partial differential equations
- 35L05 Wave equation

Cited in **2** Reviews  
Cited in **48** Documents

**Keywords:**

[spectral asymptotic expansion](#); [Laplace-Beltrami operator](#); [manifolds with boundary](#)

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**References:**

- [1] V. M. Babich and B. M. Levitan, "The focussing problem and the asymptotics of the spectral function of the Laplace-Beltrami operator," Dokl. Akad. Nauk SSSR, 230, No. 5, 1017-1020 (1978). · [Zbl 0427.35051](#)
- [2] V. Ya. Ivrij, "The propagation of singularities of a solution of the wave equation near a boundary," Dokl. Akad. Nauk SSSR, 239, No. 4, 772-774 (1978).
- [3] V. Ya. Ivrij, "Wave fronts of solutions of boundary-value problems for symmetric hyperbolic systems. I. Fundamental theorem," Sib. Mat. Zh., 20, No. 4, 741-751 (1979).
- [4] L. Nirenberg, "Lectures on linear partial differential equations," Usp. Mat. Nauk, 30, No. 4, 147-204 (1975).
- [5] M. V. Fedoryuk, "Singularities of kernels of Fourier integral operators and asymptotics of solutions of mixed problems," Usp. Mat. Nauk, 22, No. 6, 67-115 (1977).
- [6] M. A. Shubin, Pseudodifferential Operators and Spectral Theory [in Russian], Nauka, Moscow (1978). · [Zbl 0451.47064](#)
- [7] R. Courant, "Über die Eigenwerte bei den Differentialgleichungen der mathematischen Physik," Math. Z., 7, 1-57 (1920). · [Zbl 47.0455.02](#) · [doi:10.1007/BF01199396](#)
- [8] J. J. Duistermaat and V. W. Guilleman, "The spectrum of positive elliptic operators and periodic bicharacteristics," Invent. Math., 29, 39-79 (1975). · [Zbl 0307.35071](#) · [doi:10.1007/BF01405172](#)
- [9] L. Hörmander, "Fourier integral operators," Acta Math., 127, 79-183 (1971). · [Zbl 0212.46601](#) · [doi:10.1007/BF02392052](#)
- [10] L. Hörmander, "The spectral function of an elliptic operator," Acta Math., 121, No. 1-2, 193-218 (1978). · [Zbl 0164.13201](#) · [doi:10.1007/BF02391913](#)
- [11] R. B. Melrose and J. Sjöstrand, "Singularities of boundary value problems. I," Commun. Pure Appl. Math., 31, 593-617 (1978). · [Zbl 0378.35014](#) · [doi:10.1002/cpa.3160310504](#)
- [12] R. Seely, "A sharp asymptotic remainder estimate for the eigenvalues of the Laplacian in a domain in  $R^3$ ," Adv. Math., 29, No. 2, 244-269 (1978). · [Zbl 0382.35043](#) · [doi:10.1016/0001-8708\(78\)90013-0](#)
- [13] H. Weyl, "Über die asymptotische Verteilung der Eigenwerte," Göttinger Nachr., 110-117 (1911).

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