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**Binomial asymptotics of the spectrum of a boundary-value problem.** (English. Russian original)

Zbl 0583.35082

Funct. Anal. Appl. 17, 309-311 (1983); translation from Funkts. Anal. Prilozh. 17, No. 4, 79-81 (1983).

Consider the elliptic boundary value problem of order  $2m$ :

$$(*) \quad Au(x) = \lambda u(x) \quad \text{on } \Omega \subseteq \mathbb{R}^n, \quad Bju(x) = 0 \quad \text{on } \Gamma = \partial\Omega.$$

Suppose  $(*)$  is self-adjoint, semi bounded below and let  $N(\lambda)$  be the distribution function of  $(*)$ . In this paper the author extends previous results of V. Ya. Ivrii:

$$N(\lambda) = \gamma \lambda^{n/2m} + O(\lambda^{(n-1)/2m}); \quad \lambda \rightarrow +\infty$$

where  $\gamma$  is the usual constant. Furthermore under a condition on the Hamiltonian flow for the symbol of  $A$  he proves

$$N(\lambda) = \gamma \lambda^{n/2m} + o(\lambda^{(n-1)/2m}); \quad \lambda \rightarrow +\infty.$$

Reviewer: D.Robert

**MSC:**

35P20 Asymptotic distributions of eigenvalues in context of PDEs  
35J40 Boundary value problems for higher-order elliptic equations  
35A07 Local existence and uniqueness theorems (PDE) (MSC2000)

Cited in 1 Document

**Keywords:**

elliptic boundary value problem; self-adjoint; distribution function; Hamiltonian flow

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