

Giorgi, Tiziana; Smits, Robert G.

Monotonicity results for the principal eigenvalue of the generalized Robin problem. (English)

Zbl 1089.35038

Ill. J. Math. 49, No. 4, 1133-1143 (2005).

Summary: We study domain monotonicity of the principal eigenvalue $\lambda_1^\Omega(\alpha)$ corresponding to $\Delta u = \lambda(\alpha) u$ in Ω , $\frac{\partial u}{\partial \nu} = \alpha u$ on $\partial\Omega$, with $\Omega \subset \mathbb{R}^n$ a $C^{0,1}$ bounded domain, and α a fixed real. We show that contrary to intuition domain monotonicity might hold if one of the two domains is a ball.

MSC:

[35P15](#) Estimates of eigenvalues in context of PDEs
[35J25](#) Boundary value problems for second-order elliptic equations
[49R50](#) Variational methods for eigenvalues of operators (MSC2000)

Cited in **1** Review
Cited in **16** Documents

Keywords:

domain monotonicity; principal eigenvalue; bounded domain

Full Text: [Link](#)