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FULL DESCRIPTION OF THE SPECTRUM OF A STEKLOV-LIKE EIGENVALUE PROBLEM INVOLVING THE (p, q)-LAPLACIAN*

L. Barbu† G. Moroşanu‡

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Dedicated to Dr. Dan Tiba on the occasion of his 70^{th} anniversary

Abstract

In this paper we consider in a bounded domain $\Omega \subset \mathbb{R}^N$ a Steklov-like eigenvalue problem involving the (p, q)-Laplacian plus some potentials. Under suitable assumptions, using the Nehari manifold method and a variational approach, we are able to determine the full eigenvalue set of this problem as being an open interval $(\lambda_*, +\infty)$ with $\lambda_* > 0$.

MSC: 35J60, 35J92, 35P30

keywords: Eigenvalues, (p, q)-Laplacian, Sobolev spaces, Nehari manifold, variational method.

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†lbarbu@univ-ovidius.ro Ovidius University, Faculty of Mathematics and Informatics, 124 Mamaia Blvd., 900527 Constanţa, Romania;

‡morosanu@math.ubbcluj.ro Babeş-Bolyai University, Faculty of Mathematics and Computer Science, 1 Mihail Kogălniceanu Str., 400084 Cluj-Napoca, Romania and Academy of Romanian Scientists, 3 Ilfov Str., Sector 5, Bucharest