

On the monotonicity of the first eigenvalue of p -Laplacian on annuli.

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Abstract

We discuss the monotonicity of the first eigenvalue of p -Laplacian with respect to certain domain variations. More precisely, let B_1 be a ball in \mathbb{R}^N centered at the origin and let B_0 be a smaller ball compactly contained in B_1 . For $p \in (1, \infty)$, we show that the first eigenvalue of the p -Laplacian in annulus $B_1 \setminus \overline{B_0}$ strictly decreases as the inner ball moves towards the boundary of the outer ball.

This is a joint work with Dr. Vladimir Bobkov (University of West Bohemia, Czech Republic) and Dr. Sarath Sasi (NISER Bhubaneswar, India).