Variations on a theme by Cheeger

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Talk Abstract

We present some generalizations of the well-known Cheeger inequality $4\lambda(\Omega) \geq h^2(\Omega)$, where $\lambda(\Omega)$ denotes the principal eigenvalue of the Dirichlet Laplacian and $h(\Omega)$ is the Cheeger constant. The domain Ω may vary either in the class of *all* open bounded subsets of $\mathbb{R}^d$ or in the subclass of *convex* domains. In particular, the existence of optimal domains for the shape functional $\lambda(\Omega)h^{-2}(\Omega)$ is deeply discussed.

Keywords: Cheeger constant, principal eigenvalue, shape optimization, p-Laplacian.

References

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