

1137-49-52

Robin Neumayer* (neumayer@math.northwestern.edu). *The Cheeger constant of a Jordan domain without necks.*

In 1970, Cheeger established lower bounds on the first eigenvalue of the Laplacian on compact Riemannian manifolds in terms of a certain isoperimetric problem. The analogous problem on domains of Euclidean space has generated much interest in recent years, due in part to its connections to capillarity theory, image processing, and landslide modeling. In this talk, based on joint work with Leonardi and Saracco, we give an explicit characterization of minimizers in this isoperimetric problem for a very general class of planar domains. (Received January 21, 2018)