Eigenvalue (mis)behavior on manifolds

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007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

In 1970, Joseph Hersch showed that for the sphere, the product of its surface area and lowest nonzero eigenvalue is at most 8π, regardless of the metric. Moreover, the bound is realized only by the usual constant curvature metric. Following Hersch's work, attempts were made to generalize his result to other surfaces, to three-dimensional manifolds, and to other geometrically interesting spaces. After explaining how eigenvalues arise on manifolds, we will explore some of the successes, some of the surprises, and some open questions in this area.

This talk should be accessible to graduate students.   1239671779