"I can't believe it. You've actually found a practical use for geometry!"

— Bart Simpson

The Trivial Notions Seminar
Proudly Announces

Hearing the shape of a triangle

A talk by

Jonathan Zhu

Abstract

In 1966, Mark Kac asked the famous question "Can one hear the shape of a drum?"– that is, do the eigenvalues of the Laplacian determine a planar domain up to rigid motions? Nonconvex polygonal counterexamples were found in 1992 by Gordon, Webb and Wolpert, but the question remains open under various additional assumptions such as convexity or smoothness. In her thesis, Durso showed that triangular domains are determined by their spectrum amongst other triangles, and recently Grieser and Maronna gave a simpler proof. In this talk, we will discuss at length some approaches to the inverse spectral problem, after which we will shift gears and discuss the geometry and determination of triangles.

Thursday, October 15$^{\text{th}}$, at 1:00 pm
Science Center 222