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Leibniz
Universität
Hannover

Oberseminar Analysis und Theoretische Physik

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The sound of quadrilaterals and symmetry

Have you heard the question, "Can one hear the shape of a drum?" Do you know the answer? This question is the title of an article published in 1966 by M. Kac based on the following question. If two planar domains have the same spectrum, are they identical up to rotation, translation, and reflection? Although it may seem that Kac's question was laid to rest by Gordon, Webb and Wolpert who demonstrated in 1991 that general the answer is "No", this question is in fact still very much alive. Imagine a drum. What shape is it? The first shape which comes to mind is likely to be a disk. From there it's natural to envision other smoothly bounded shapes. Another feature of the disk is convexity. For these two classes of drums Kac's question is open. In this talk I will discuss joint work with Z. Lu in which we prove that one can hear the shape of parallelograms and acute trapezoids and that one can hear the shape of the regular n -gon amongst all n -gons. In conclusion, I will discuss how one can realistically hear the shape of the regular n -gon among all convex n -gons.

**Dienstag, 9.7.2013, 16:00 Uhr, Raum b305
Hauptgebäude der Leibniz Universität**

Dazu laden herzlich ein:

Prof. Dr. Joachim Escher

Prof. Dr. Olaf Lechtenfeld

Prof. Dr. Elmar Schrohe

Prof. Dr. Christoph Walker