

Conferencia

Santaló 2021

La Facultad de Ciencias Matemáticas y la Revista Matemática Complutense organizan anualmente la Conferencia Santaló, en memoria de Luis Santaló (1911-2001), doctor por esta universidad. La conferencia es impartida cada año por un/a profesor/a de reconocido prestigio. La conferenciante de este curso es:

Carolyn S. Gordon

Dartmouth College (USA)

Detecting (or not!) geometry and topology from spectral data

Inverse spectral geometry asks the extent to which geometric and topological information is encoded in spectral data. The geometric objects we will consider are bounded Euclidean domains and also more general compact Riemannian manifolds. We will look at two types of spectral data: the spectrum of the Laplacian (with Dirichlet or Neumann boundary conditions) and the Steklov spectrum. The inverse spectral problem for the Laplacian is sometimes phrased as "Can one hear the shape of a drum?" since the eigenvalues of a plane domain correspond to the characteristic frequencies of vibration of the domain viewed as a vibrating membrane. The Steklov spectrum of a bounded domain or of a Riemannian manifold M with boundary is the eigenvalue spectrum of the so-called Dirichlet-to-Neumann operator, which inputs smooth functions u on the boundary of M and outputs the normal derivative across the boundary of the unique harmonic extension of u to M . While Steklov introduced the Steklov spectrum in 1902, it remained largely dormant for many years. Motivated in part by striking applications, the study of the Steklov spectrum has dramatically accelerated in recent years. After introducing the Laplace and Steklov spectra, we will give a partial survey, comparing and contrasting some of the inverse spectral results and techniques for the Laplace spectrum and the Steklov spectrum.

Jueves, 30 de septiembre de 2021, 13:00 h

Online en:

Canal YouTube de la Facultad de CC. Matemáticas



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