Seminario de Análisis y Aplicaciones

Viernes, 27 de octubre de 2017

11:30 h., Módulo 17 - Aula 520 (Depto. Matemáticas UAM)

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Self-similar measures: asymptotic bounds for the dimension and Fourier decay of smooth images

Resumen:

R. Kaufman and M. Tsujii proved that the Fourier transform of self-similar measures has a power decay outside of a sparse set of frequencies. We present a version of this result for homogeneous self-similar measures, with quantitative estimates, and derive several applications: (1) non-linear smooth images of homogeneous self-similar measures have a power Fourier decay, (2) convolving with a homogeneous self-similar measure increases correlation dimension by a quantitative amount, (3) the dimension and Frostman exponent of (biased) Bernoulli convolutions tend to 1 as the contraction ratio tends to 1, at an explicit quantitative rate.

These results are based on a joint work with Pablo Shmerkin.

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