

Colloquium MathAlp

23 novembre 2017 – 16h30

Institut Fourier, Amphithéâtre Claude Chabauty
Campus universitaire de Saint-Martin-d'Hères

Maciej Zworski (University of California, Berkeley)

Fractal uncertainty for transfer operators

I will present a new explanation of the connection between the fractal uncertainty principle (FUP) of Bourgain–Dyatlov, a statement in harmonic analysis, and the existence of zero free strips for Selberg zeta functions, which is a statement in geometric scattering/dynamical systems. The connection is proved using (relatively) elementary methods via the Ruelle transfer operator which is a well known object in thermodynamical formalism of chaotic dynamics. The talk will assume no knowledge of the subject and I will also present applications of FUP to properties of eigenfunction on compact hyperbolic surfaces due to Dyatlov–Jin.