MIT
MATHEMATICS

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS

Simple Person's
Applied Math Seminar
(SPAMS)

Thursday, March 31, 2022

6:00pm − 6:45pm   **Room : 2 - 132**

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"A discrete 2D fractal uncertainty principle"

Abstract

A fractal uncertainty principle (FUP) states that a function 'f' and its Fourier transform cannot both be large on a fractal set. These were recently introduced by Semyon Dyatlov and collaborators in order to prove new results in quantum chaos. So far FUPs are only understood for fractal sets in R, and fractal sets in R^2 remain elusive. In this talk, we prove a sharp fractal uncertainty principle for Cantor sets in Z/NZ x Z/NZ, a discrete model for R^2.