Mathematics Colloquium

Approximation on the Cantor set and other related fractals

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Monday, October 14, 2019
11:10 a.m. − 12 p.m.
Building 33 Room 457

Abstract

The aim of this talk will be to consider (Diophantine) approximation on general "Cantor-like" fractals. In 2007, Levesley, Salp, and Velani considered the problem of approximating points in the middle-third Cantor set at a given rate of approximation by rational numbers which have denominators which are powers of 3. They showed that the Hausdorff measure of the set in question is either zero or full according to, respectively, the convergence or divergence of a certain sum which is dependent on the specified rate of approximation. In this talk, I will discuss an analogue of this result for more general "Cantor-like" fractals (specifically, for self-conformal sets satisfying the open set condition). This talk is based on joint work with Balázs Bárány (Budapest).

About the speaker: My main research interests are in Diophantine Approximation and Fractal Geometry. I completed my PhD at the University of York (UK) in December 2017 under the supervision of Professor Victor Beresnevich and Professor Sanju Velani. For my PhD thesis on "Mass Transference Principles and Applications in Diophantine Approximation", I was (jointly) awarded the Anand Ramachandran Memorial Prize for the best thesis in the Department of Mathematics at the University of York. After completing my PhD, I spent one year as a postdoctoral research fellow at the University of Manchester (UK). Since January 2019, I have been a postdoctoral research fellow at the University of Bristol (UK).

Cookies will be provided before the talk at 11 a.m.
in the same room as the talk, Building 33 Room 457.