PhD research topic proposal
BME, Doctoral School of Mathematics and Computer Science

Name and degree of supervisor :

Balázs Bárány, PhD

Are you willing to supervise Stipendium Hungaricum applicants?

No

Title of the topic:

Geometric properties of non-conformal systems

Short description:

In recent years, considerable attention has been paid to understanding the geometric properties of non-conformal attractors of dynamical systems, and iterated function systems. Many breakthrough results appeared in the last few years; however, the field is far from being well understood.

The task of the PhD student is first to get a deep understanding of the existing results of the field and then make significant progress with special regard to the dimension theory of non-linear and non-conformal systems, and the dimension of the generalized 4-corner set, and overlapping self-affine carpets. The prospective student will be part of our "Fractal Geometry and its Applications" research group, and our Dynamical Systems research group.

Requirements:

geometric measure theory, ergodic theory, measure theory, probability theory

Contact:
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Place of work:

Department of Stochastics, Institute of Mathematics, Budapest University of Technology and Economics