Department of Mathematics, BGU

BGU Probability and Ergodic Theory (PET) seminar

On *Thursday, November ,22 2018*

At *11:00 – 12:00*

In *101-*

Yfitach Dayan (Tel-Aviv University)

will talk about

Diophantine approximations on random fractals

Abstract: We will present a model for construction of random fractals which is called fractal percolation. The main result that will be presented in this talk states that a typical fractal percolation set E intersects every set which is winning for a certain game that is called the "hyperplane absolute game", and the intersection has the same Hausdorff dimension as E. An example of such a winning set is the set of badly approximable vectors in dimension d. In order to prove this theorem one may show that a typical fractal percolation set E contains a sequence of Ahflors-regular subsets with dimensions approaching the dimension of E, where all the subsets in this sequence are also "hyperplane dffiuse", which means that they are not concentrated around affine hyperplanes when viewed in small enough scales. If time permits, we will sketch the proof of this theorem and present a generalization to a more general model for random construction of fractals which is given by projecting Galton-Watson trees against any similarity IFS whose attractor is not contained in a single affine hyperplane.