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Counting Boxes: A Friendly Introduction to Fractal Dimension

Abstract for the Combinatorics and Geometry/Topology Seminar Seminars 2019 November 26

The box-counting dimension of a set is calculated by covering a set with 'boxes' and seeing how fast the number of boxes grows in proportion to decreasing the size of the box. For manifolds in Euclidean space, such as curves, surfaces, etc., the box-counting dimension agrees with the topological dimension. My work explores the box-counting dimension (and Hausdorff dimension) in Cantor space, the boundary of an infinite tree. Specifically, I will answer the following question: Given sets E and F in Cantor space and a random isometry f, what is the dimension of the intersection of E and f(F)?
