Dimension Theory of Self Affine Iterated Function Systems

MSc Thesis

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Abstract

The field of dimension theory of fractals have been widely studied for the last decades. One method used for calculating the dimension is using an iterated function systems $\Phi = \{S_i\}$. In the general case, we do not have a formula for the dimension, however in special cases we can give exact answers, such as if the functions in Φ are similarities. In this thesis we introduce some basic notations and definitions of dimension theory and overview the most important properties of Hausdorff and box dimensions. In the second part we review some recent results of Feng and Hu as well as one of Hochman and apply these to a specific affine IFS, hence obtaining the same box dimension in two different ways.