Function spaces and Hausdorff dimension on fractals

António M. Caetano
Universidade de Aveiro
e-mail: acaetano@ua.pt

Abstract

We start by surveying a possible approach for function spaces of Besov type on special closed subsets of $\mathbb{R}^n$. Afterwards we recall that, in the case of Sobolev spaces and Besov spaces on $\mathbb{R}^n$, the Hausdorff dimension for the graphs of continuous functions belonging to such spaces has been studied by several authors, and that in the case of Besov spaces the final answer concerning the maximal possibility for the value of the Hausdorff dimension of those graphs was given by F. Roueff in his thesis in 2000. Finally, we report on our results on the corresponding problem of the determination of the maximal Hausdorff dimension of graphs of continuous functions on Besov spaces built themselves over fractals sets like d-sets.

The last part of the talk describes joint work with Abel Carvalho, from Univ. Aveiro.