SEMINARIO DE ANÁLISIS MATEMÁTICO Y MATEMÁTICA APLICADA

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Elliptic PDE and Fourier analysis in rough sets with poor connectivity

How much can we curve the euclidean space if we still want the classical results from Fourier analysis to hold? How irregular can the boundary of a domain be if we want elliptic PDE to be well-behaved? In the last decades, it has been shown by many authors that these questions (if interpreted in appropriate senses) have answers which are intimately related, through the theory of uniformly rectifiable sets.

In this talk, we will explore some of these connections in settings which are more general than those considered before in the literature, because the connectivity properties are very poor and the elliptic equations are (on the edge of) the most general possible. This is a joint work with M. Cao and J.M. Martell (both from ICMAT).

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