

Intermediate dimensions

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Abstract:

The intermediate dimensions are a family of dimensions which interpolate between Hausdorff and box dimensions. After defining the intermediate dimensions, we will describe the form they take for some different fractal sets. In particular, we will consider sets of numbers which have continued fraction expansions with restricted entries, and the graph of the popcorn function. We will then give a necessary and sufficient condition which determines whether a given function can be realised as the intermediate dimensions of a subset of Euclidean space; the sufficiency of this condition is proved using a homogeneous Moran set construction. During this talk we will mention results from several papers, three of which are joint with Jonathan Fraser, Haipeng Chen and Alex Rutar respectively.