Low Distortion Embeddings of Infinite Metric Spaces

Abstract:
We present a proof of a Ramsey-type theorem for infinite metric spaces due to Matousek. Then we show that for every K > 1 every uncountable, separable complete metric space has a perfect subset that K-bi-Lipschitz embeds into the real line. Finally we study decompositions of infinite separable metric spaces into subsets that, for some K > 1, K-bi-Lipschitz embed into the real line.

The first two subjects only use some elementary Ramsey theory. In the last part of the talk some set-theoretic independence results will be discussed.

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