Isometric Embeddings and Universal Spaces

G. GODFROY, N. J. KALTON

Université Paris 6, Institut de Mathématiques, Projet Analyse, Case 186
4, Place Jussieu, 75252 Paris Cedex 05, France, gig@ccr.jussieu.fr

Department of Mathematics, University of Missouri, 119 Mathematical Sciences Building
Columbia, MO 65211, USA, nigel@math.missouri.edu

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Abstract: We show that if a separable Banach space $Z$ contains isometric copies of every strictly convex separable Banach space, then $Z$ actually contains an isometric copy of every separable Banach space. We prove that if $Y$ is any separable Banach space of dimension at least 2, then the collection of separable Banach spaces which contain an isometric copy of $Y$ is analytic non Borel.

Key words: isometrically universal space, strictly convex norm, well-founded tree.

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References


