

Separable Lindenstrauss spaces with extreme points which do not contain c

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A Banach space X is called an L_1 -predual or a *Lindenstrauss space* if its dual is isometric to $L_1(\mu)$ for some measure μ .

In 1969 Zippin proved that every separable Lindenstrauss space contains a 1-complemented copy of the space c_0 , the Banach space of real null sequences. However, in the *Concluding remarks*, the author claims that a separable L_1 -predual contains a (complemented) copy of c (the Banach space of real convergent sequences) if its unit ball has an extreme point. Although only a sketch of the proof of this property was indicated, this result has been used by others in order to obtain some classical characterizations of polyhedral Lindenstrauss spaces.

We shall prove that there are many separable Lindenstrauss spaces with extreme points which do not contain an isometric copy of c , therefore disproving Zippin's claim.