

$$\|F\|_{\mathfrak{F}l^q} \leq 2K_p N^{1/q-1} \gamma^{1/p-1} = 2K_p \epsilon^{1/q-1} \cdot \gamma^{1/p-1/q}$$

so that, if N is large enough $\|F\|_{\mathfrak{F}l^q} < \epsilon$. Put

$$E_{\epsilon,p} = \{x; F(x) = 1\}.$$

Now $F(x) = 1 \Leftrightarrow f_j(\lambda_j x) = 1$ for all j , so that measure $(E_{\epsilon,p}) \geq 2\pi - N\gamma = 2\pi - \epsilon$.

Let μ be carried by $E_{\epsilon,p}$, $\mu \in \mathfrak{F}l^p$, then $|\hat{\mu}(n)| = |\int e^{-inx} d\mu| = |\int e^{-inx} F(x) d\mu| = |\sum \hat{F}(m-n) \hat{\mu}(m)| \leq \|F\|_{\mathfrak{F}l^q} \|\mu\|_{\mathfrak{F}l^p} < \epsilon \|\mu\|_{\mathfrak{F}l^p}$ which proves the lemma.

THEOREM. *There exists a set E of positive measure on T which is a set of uniqueness for $\cup_{p < 2} l^p$.*

PROOF. Take $\epsilon_n = 10^{-n}$, $p_n = 2 - \epsilon_n$,

$$E = \bigcap_{n=36}^{\infty} E_{\epsilon_n, p_n}.$$

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INJECTIVE ENVELOPES OF BANACH SPACES

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1. Introduction. We consider the category whose objects are Banach spaces and whose *maps* are the linear operators of norm not exceeding 1 from one Banach space into another. A Banach space Z is *injective* if it has the same Hahn-Banach extension property that is possessed by the scalars (real or complex); that is, any Z -valued map from a subspace of a Banach space Y extends to a Z -valued map of the same norm on all of Y . An injective envelope of a Banach space B is a pair $(I, \epsilon B)$, ϵB an injective Banach space and $I: B \rightarrow \epsilon B$ a linear isometry (our linear isometries need not be onto), such that the only subspace of ϵB that is injective and contains $I[B]$ is ϵB itself. In this note, we demonstrate the existence and uniqueness of the injective envelope of a Banach space and, in the process, we give a short proof of the fact that an injective Banach space is linearly isometric with a function space $C(M)$, M compact Hausdorff and extremally disconnected.