ISRAEL JOURNAL OF MATHEMATICS, Vol. 68, No. 1, 1989

ON l^p-COMPLEMENTED COPIES IN ORLICZ SPACES II[†]

BY
FRANCISCO L. HERNÁNDEZ AND BALTASAR RODRIGUEZ-SALINAS
Dpto. Análisis Matemático, Facultad de Matemáticas, Universidad Complutense, 28040 — Madrid, Spain

ABSTRACT

For any $p > 1$, the existence is shown of Orlicz spaces L^F and l^F with indices p containing *singular* l^p-complemented copies, extending a result of N. Kalton ([6]). Also the following is proved: *Let* $1 < \alpha \leqq \beta < \infty$ *and H be an arbitrary closed subset of the interval* $[\alpha, \beta]$. *There exist Orlicz sequence spaces* l^F *(resp. Orlicz function spaces* L^F*) with indices* α *and* β *containing only singular* l^p*-complemented copies and such that the set of values* $p > 1$ *for which* l^p *is complementably embedded into* l^F *(resp.* L^F*) is exactly the set H (resp.* $H \cup \{2\}$*).* An explicitly defined class of minimal Orlicz spaces is given.

Introduction

The class of *minimal* Orlicz sequence spaces was introduced by J. Lindenstrauss and L. Tzafriri in ([8], [9]) proving the existence of reflexive Orlicz sequence spaces l^F containing no complemented subspaces isomorphic to l^p for any $p \geqq 1$. An extension of the notion of minimality to the context of Orlicz function spaces $L^F(\mu)$ was given in [1]. The examples of minimal Orlicz functions F obtained until today have *not* been *explicitly defined*, excluding the trivial multiplicative ones. Indeed, the existence of minimal functions is proved with the help of Zorn Lemma and all known examples are obtained, up to equivalence, via a sophisticated method by constructing Orlicz functions F_ρ associated with 0–1 valued sequences $\rho = (\rho(n))$ developed by J. Lindenstrauss and L. Tzafriri ([8], [9], [10]).

One of the purposes of this paper is to show a concrete class of minimal

[†] Supported in part by CAICYT grant 0338–84.
Received December 20, 1988 and in revised form March 2, 1989