SOME REMARKS ON CHOQUET BOUNDARY

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ABSTRACT

In this note we prove some results related to Choquet boundary and Korovkin functions without using measure theory and make some interesting remarks.   Our tool is Weierstrass-Stone type of arguments.

INTRODUCTION

Let X be a compact Hansdorff space and L a linear subspace of C(X), the space of real valued continuous functions on X such that L contains the constant functions.   If L separates the points of X and is separable, then the Choquet boundary $\partial_L X$ of X with respect to L (for definition see section 1) is a G_δ set.   This result is due to Bishop and de Leeuw [5] and a somewhat different proof of this result has been given by Edwards [7].   The proofs in [5] and [7] use measure theory as the principal tool.   In this note we have given a completely different proof of this and related results without using any measure theory. Our approach also shows that there is hardly any usefulness in a theorem of Bauer [2] and Edwards ([7], Theorem 2, p.118) (see our remark 1.2).