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On the dual space $C^*0(S,X)$

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Abstract

Let S be a locally compact Hausdorff space and let us consider the space $C_0(S,X)$ of continuous functions vanishing at infinity, from S into the Banach space X . A theorem of I. Singer, settled for S compact, states that the topological dual $C^*0(S,X)$ is isometrically isomorphic to the Banach space $rbv(S,X^*)$ of all regular vector measures of bounded variation on S with values in the strong dual X^* .

Using the Riesz-Kakutani theorem and some routine topological arguments, we propose a constructive detailed proof which is, as far as we know, different from that supplied elsewhere.

Author Keywords

Bounded functionals' vector measures; Vector-Valued functions

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