

Fourier Analysis Of Unbounded Measures On Locally Compact Abelian Groups

INTERPOLATION SETS AND THE SIZE OF QUOTIENTS OF FUNCTION SPACES ON A LOCALLY COMPACT GROUP

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ABSTRACT. We devise a fairly general method for estimating the size of quotients between algebras of functions on a locally compact group. This method is based on the concept of interpolation sets and unifies the approaches followed by many authors to obtain particular cases. We find in this way that there is a linear isometric copy of $\ell_\infty(X)$ in each of the following quotient spaces:
- $WAP_\kappa(G)/C_0(G)$ whenever G contains a subset X that is an E -set (see the definition in the paper) and $\kappa = \kappa(X)$ is the minimal number of compact sets required to cover X . In particular, $\kappa = \kappa(G)$ when G is a STW -group.
- $WAP(G)/B(G)$, when G is any locally compact group and $\kappa = \kappa(Z(G))$ and $Z(G)$ is the centre of G , or when G is either an LN -group or a nilpotent group, and $\kappa = \kappa(G)$.
- $WAP_\kappa(G)/B_\circ(G)$, when G and κ are as in the foregoing item.
- $CB(G)/C_0(G)$, when G is any locally compact group that is neither compact nor discrete and $\kappa = \kappa(G)$.

1. INTRODUCTION

The main focus throughout the paper will be on C^* -algebras of functions on a locally compact group G with identity e . If $\ell_\infty(G)$ denotes the C^* -algebra of bounded, scalar-valued functions on G with the supremum norm, our concern will be with the following subalgebras of $\ell_\infty(G)$: the algebra $CB(G)$ of continuous bounded functions, the algebra $ZUC(G)$ of bounded right uniformly continuous functions, the algebra $WAP(G)$ of weakly almost periodic functions, the Fourier-Stieltjes algebra $B(G)$, the uniform closure of $B(G)$ denoted by $\overline{B}(G)$ and best known as the Eberlein algebra, the algebra $AP(G)$ of almost periodic functions, and the algebra $C_0(G) \oplus \mathbb{C}1$, where $C_0(G)$ consists of the functions in $CB(G)$ vanishing at infinity.
The spectra of these algebras $\mathcal{A}(G)$ define some of the best-known semigroup compactifications in the sense of [5]. These are compact right (or left) topological semigroups G^* having a dense, continuous, homomorphic copy

Date: July 19, 2013.
2010 Mathematics Subject Classification. Primary 22D15; Secondary 43A46, 43A15, 43A60, 54H11.
Key words and phrases. almost periodic functions, Fourier-Stieltjes algebra, weakly almost periodic, semigroup compactification, almost periodic compactification, almost periodic compactification, interpolation sets.
Research of the second named author supported by the Spanish Ministry of Science (including FEDER funds), grant MTM2008-04599/MTM and Fundació Caixa Castelló-Bancaixa, grant P1.1B2008-26.

arXiv:1307.4941v1 [math.FA] 18 Jul 2013

Primary: 43A Measures on groups and semigroups, etc. 43A Fourier and Fourier-Stieltjes transforms on locally compact and other abelian groups 43A Other transforms and operators of Fourier type. Secondary: 43A Positive On continuity of the variation and the Fourier transform. Maserick, P. H., Illinois.tempered distributions on general locally compact abelian groups. It is true that Bruhat edge, a detailed study of the Fourier transform has not been carried out.Let G be a locally compact abelian group. of Schwartz [10], but, to the best of our knowledge, a detailed study of the Fourier transform has not been carried out.compact abelian groups (LCAG's) G [11], but so far these extensions are transform for unbounded measures over arbitrary locally compact.Throughout, G is a locally compact abelian group, with dual group r, and Haar The Fourier transform (inverse Fourier transform) of a measure is denoted by .. The space Mq(G)(1 unbounded measures of type q [S], consists of.FourierStieltjes transform, unbounded measures, [16] C. Berg, G. Forst: Potential Theory on Locally Compact Abelian Groups, Springer.Title Fourier Analysis of Unbounded Measures on Locally Compact Abelian Groups. Binding Gil de Lamadrid American Mathematical Society Fourier Analysis.We extend to locally compact abelian groups, Fejer's theorem on pointwise convergente of Holland on the Fourier transform of unbounded measures of type q.Annales de l'institut Fourier, Tome 28 () no. 2, p. Fourier analysis of unbounded measures on locally compact abelian groups, Memoirs of the Ann. Math.of Fourier transforms, of a stationary generalized process over an abelian locally compact group, has a case of stationary random measures on R and Brillinger [4] in the case of stationary random Such a distribution x(w), w E S(G) has a Fourier transform X(Y),!PYE S(A) . Fourier analysis of unbounded measures on.tors (also known as unbounded multipliers) on locally compact Abelian group with Haar measure AC. 95 will stand for the Fourier transform on any of.Potential Theory on Locally Compact Abelian Groups pp Cite as In connection with convolution of unbounded measures we introduce shift-bounded .a ?-compact, locally compact Abelian group G. This cone of measures . transformable, and their Fourier transform is also positive and positive defi- nite. .. [1] L. N. Argabright, J. Gil. de Lamadrid, Fourier analysis of unbounded measures.Fourier series; Fourier integrals; Locally compact groups; Haar measures; Harmonic analysis on locally compact abelian groups; Theory and examples of.algebras as well as harmonic analysis in general. Notations that are Throughout this paper G denotes a locally compact abelian group with Haar measure dx; the group operation is written as multiplica- tion. Although some of . particular to the theory of Fourier transforms of unbounded measures and to.from one another. This is achieved using Fourier analysis of unbounded. Radon measures on locally compact abelian groups, as developed by.regular, Borel measures on G. Abstract harmonic analysis is primarily the study For locally compact Abelian groups, the functions > exp (ikt) on T and x i->.

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