

RESEARCH ANNOUNCEMENTS

The purpose of this department is to provide early announcement of significant new results, with some indications of proof. Although ordinarily a research announcement should be a brief summary of a paper to be published in full elsewhere, papers giving complete proofs of results of exceptional interest are also solicited.

FINITE SECTION WIENER-HOPF EQUATIONS ON A COMPACT GROUP WITH ORDERED DUAL¹

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Let Θ be a compact Abelian topological group with dual Ξ on which there is given an order relation " $<$ " compatible with the group structure. For $\xi \in \Xi$ and $\theta \in \Theta$ we denote by (ξ, θ) the value of the character ξ at θ . $d\theta$ denotes Haar measure on Θ so normalized that Θ has measure 1. A_0 is the class of those functions $f(\theta)$ of the form

$$f(\theta) = \sum_{\xi} \mathbf{f}(\xi)(\xi, \theta)$$

for which $\|f\|_0$ is finite where

$$\|f\|_0 = \sum_{\xi} |\mathbf{f}(\xi)|.$$

Note that

$$\mathbf{f}(\xi) = \int_{\Theta} f(\theta)(-\xi, \theta) d\theta.$$

DEFINITION 1. A Banach algebra A of complex functions on Θ is said to be of type S if:

1. $A \subset A_0$, and $\|f\|_0 \leq \|f\|$ for all $f \in A$;
2. $(\xi, \theta) \in A$ for every $\xi \in \Xi$, and finite linear combinations of (ξ, θ) 's are dense in A ;
3. $f \in A$, $g \in A_0$ and $|\mathbf{g}(\xi)| \leq |\mathbf{f}(\xi)|$ for all ξ implies $g \in A$ and $\|g\| \leq \|f\|$.

Henceforth every algebra A considered will be of type S .

Let us introduce the following families of operators:

$$E^+(\eta)f \cdot (\theta) = \sum_{\xi \geq \eta} \mathbf{f}(\xi)(\xi, \theta); \quad E^-(\eta)f \cdot (\theta) = \sum_{\xi \leq \eta} \mathbf{f}(\xi)(\xi, \theta).$$

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