

Banach Algebras 2009

*A conference supported by the European Science Foundation under the
ESF-EMS-ERCOT partnership*

*July 14-24, 2009, Stefan Banach International Mathematical Center, Będlewo,
Poland*

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Constructing Weak* Topologies on Weighted Convolution Algebras.

ABSTRACT. Suppose that ω is a locally bounded weight on $\mathbf{R}^+ = [0, \infty)$ for which $L^1(\omega)$ is a convolution algebra. Let $C_0(1/\omega)$ be the subspace of $L^\infty(1/\omega)$ consisting of continuous functions f for which f/ω has essential limit 0 as x goes to infinity. We show that there is a right-continuous submultiplicative weight ω' , unique to within equivalence, for which the algebra $M(\omega')$ of measures is the dual space of $C_0(1/\omega) = C_0(1/\omega')$ and is the multiplier algebra of $L^1(\omega) = L^1(\omega')$. We always have $L^1(\omega) \subseteq M(\omega')$, and when $M(\omega)$ is an algebra, we also have $M(\omega) \subseteq M(\omega')$. If time permits, we will describe other results about these convolution algebras.