İSTANBUL ANALYSIS SEMINARS

ABSTRACT HARMONIC ANALYSIS OF WEIGHTED ORLICZ SPACES

Alen OSANÇLIOL

İstanbul University
Department of Mathematics

Abstract: Let G be a locally compact abelian group, w be a weight on G and let Φ be a Young function. The weighted Orlicz space is a natural generalization of the classical weighted Lebesgue space $L_w^p(G)$, $1 \leq p \leq \infty$ and it is denoted by $L_w^\Phi(G)$. In this talk, firstly we investigate the inclusions between the weighted Orlicz spaces depending on Young function Φ and weight w. And we obtain some fundamental properties of $L_w^\Phi(G)$.

The main goal of this talk is to find necessary and sufficient conditions for the Banach algebra structure of the weighted Orlicz space with respect to pointwise multiplication and convolution. Especially, we focused on the Banach algebra $L_w^\Phi(G)$ with respect to convolution and study some properties such as characterization of the maximal ideal space, semisimplicity and determining the closed ideals of the Banach algebra $L_w^\Phi(G)$.

The talk is based on my Ph.D. thesis (Advisor: Serap Öztop).

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