

On Weighted $A_p(G)$ -Modules

Serap Öztop

Abstract

Let G be a locally compact abelian group with Haar measure, w be a weight function on G and $1 < p < \infty$. The work of R. Spector [2] on $A_p(G)$ has motivated us to be interested in the structure theory of weighted $A_p(G)$ denoted by $A_{p,w}(G)$. We show that $A_{p,w}(G)$ is a Banach $A_p(G)$ -module under pointwise multiplication and, as such, a fixed $v \in A_{p,w}(G)$ induces by multiplication an operator T_v from $A_p(G)$ to $A_{p,w}(G)$ defined by $T_v(u) = uv$. Following the work of Friedberg [1] we show that the compact multiplier T_v is trivial if G is a nondiscrete. We also study some multiplier problems from $A_p(G)$ to $A_{p,w}(G)$ spaces.

2000 AMS subject classification. Primary 43A20, 43A22, 43A15; Secondary 46L07, 46B50.

References

- [1] Friedberg, S.H. : *Compact multipliers on Banach algebras*, Proc. Amer. Math. Soc. **77** , 210 (1979).
- [2] Spector, R. : *Sur la structure locale des groupes abéliens localement compacts*, Bull. Soc. Math. France, Mémoire **24** (1970).