

Rezola, M. L.

A theorem of density for translation invariant subspaces of $L^p(G)$. (English) Zbl 0558.43002
Boll. Unione Mat. Ital., VI. Ser., A 4, 43-47 (1985).

Given a locally compact Abelian Hausdorff group G with Haar measure, and denoting by $L_p(G)$ the corresponding Banach spaces, the author proves three theorems assuring the density of translation invariant subspaces S of $L_p(G)$ for $1 \leq p < \infty$, under some additional assumptions (among them, invariance of S under multiplication with suitable functions). We state the last theorem: If S is a self-adjoint translation invariant subspace of $L_p(G)$ and there exists $\phi \in L_\infty(G)$ which is not periodic and such that $\phi S \subseteq S$, then S is dense in $L_p(G)$.

Reviewer: [G.Crombez](#)

MSC:

[43A15](#) L^p -spaces and other function spaces on groups, semigroups, etc.

Keywords:

dense subspaces; locally compact Abelian Hausdorff group; translation invariant subspaces