

One parameter subgroups of topological abelian groups

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For topological abelian groups which are k -spaces, the arc component of the dual group is the union of its one-parameter subgroups. This result published by Nickolas in 1977, remained for some years the only available piece of information about one parameter subgroups outside the class of locally compact groups.

In this talk we will go deeper into the study of one parameter subgroups of topological abelian groups. It will be shown that for wide classes of topological abelian groups the arc component of the group is exactly the union of the one parameter subgroups. We will study the presence of this property in topological vector spaces endowed with weak topologies. We will show also that for some locally arc-connected reflexive groups, the exponential map from the Lie algebra into the group is open.