

New Examples of Non-Wiener Groups

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A locally compact group G is said to have the Wiener property if every proper, closed ideal of $L_1(G)$ is contained in the kernel of some irreducible unitary representation of G . One reason that the Wiener property is important is that it is a measure of how similar $L_1(G)$ is to the group C^* -algebra: if a group is not Wiener, then the ideal structure of $L_1(G)$ is much more complicated than that of $C^*(G)$. We present new work in which we prove that certain important classes of groups are not Wiener. For instance, we show that the group of automorphisms of an infinite regular tree is not Wiener, answering a question of Palmer. Our results also apply to split reductive algebraic groups over non-archimedean local fields. This is joint work with Max Carter.