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Character Amenability of Banach Algebras

The notion of character amenability of Banach algebras will be discussed. It will be shown that for a locally compact group G , the amenability of either of the group algebra $L^1(G)$ or the Fourier algebra $A(G)$ is equivalent to the amenability of the underlying group G .

We also discuss some cohomological implications of character amenability. In particular we show that if A is a commutative character amenable Banach algebra, then $\mathcal{H}^n(A, E) = \{0\}$ for all finite-dimensional Banach A -bimodules E , and all $n \in \mathbb{N}$. This in particular implies that all finite-dimensional extensions of such Banach algebras split strongly. This extends earlier results of H. Steiniger and myself on Fourier and generalized Fourier algebras to the larger class of commutative character amenable Banach algebras.