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2-weak amenability of Beurling algebras

Let $L^1_{\omega}(G)$ be a Beurling algebra on a locally compact abelian group G. We look for general conditions on the weight which allows the vanishing of continuous derivations of $L^1_{\omega}(G)$ into its iterated duals. This leads us to introducing vector-valued Beurling algebras and considering the translation of operators on them. This is then used to connect the augmentation ideals to the behavior of derivations space. We apply these results to give examples of various classes of 2-weakly amenable and none 2-weakly amenable Beurling algebras.