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On isomorphisms between weighted $L^p$-algebras. (English) Zbl 07451289

There are many interesting problems concerning algebra isomorphisms. For example, whether the existence of an algebra isomorphism between two group algebras implies that the underlying groups are isomorphic. In this paper, bicontinuous biseparating algebra isomorphisms between weighted $L^p$-algebras on locally compact groups are characterized (the weights are continuous). As a result, previous results of Edwards, Parrott, and Strichartz on algebra isomorphisms between $L^p$-algebras are extended to the setting of weighted $L^p$-algebras. Automorphisms of certain weighted $L^p$-algebras on integers are then studied, by applying known results on composition operators to classical function spaces.

Reviewer: Elijah Liflyand (Ramat-Gan)

MSC:

43A20 $L^1$-algebras on groups, semigroups, etc.
43A22 Homomorphisms and multipliers of function spaces on groups, semigroups, etc.

Keywords:

locally compact groups; weighted $L^p$-algebras; topological group isomorphisms; biseparating isomorphism;
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References:

[15] Nikolskii, N. K., Spectral synthesis for the shift operator, and zeros in certain classes of analytic functions that are smooth


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