

Asymptotic Unitary Equivalence and Classification of simple C^* -algebras

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Abstract

Let \mathcal{A} be the class of those unital separable simple C^* -algebras A which has the property that $A \otimes U$ has tracial rank zero or one for any UHF-algebra U associated with some supernatural number of infinite type. We will provide a classification theorem for those C^* -algebras in \mathcal{A} which satisfy the UCT (up to \mathcal{Z} -stable isomorphism). This class contains all unital simple AH-algebras and many other C^* -algebras, notably, the Jiang-Su algebra.

The proof uses a method of W. Winter. It also requires a uniqueness theorem and an existence theorem which are finer than the earlier ones used in the Elliott program. We will describe these development.