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AF-Embeddings of Nuclear C*-algebras

A C*-algebra is approximately finite dimensional (AF) if it can be expressed as a closed union of finite dimensional subalgebras. Although the class of AF-algebras is fairly well understood, subalgebras of AF-algebras are still mysterious. A question of Blackadar and Kirchberg asks if every separable, nuclear, stably finite C*-algebra embeds into an AF-algebra. I will discuss a recent partial solution to this question: every separable, nuclear, C*-algebra which satisfies the UCT and has a faithful trace embeds into an AF-algebra. Moreover, the AF-algebra may be chosen to be simple, unital, with unique trace, and the embedding may be chosen to be trace-preserving. The key tool is a new classification result for faithful morphisms from separable, nuclear, UCT C*-algebras into simple, unital, Q-stable AF-algebras with unique trace.