

ON THE CLASSIFICATION OF SIMPLE NUCLEAR C*-ALGEBRAS

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ABSTRACT. A conjecture of George Elliott dating back to the early 1990's asks if separable, simple, nuclear C*-algebras are determined up to isomorphism by their K -theoretic and tracial data. Restricting to purely infinite algebras, this is the famous Kirchberg-Phillips Theorem. The stably finite setting proved to be much more subtle and has been a driving force in research in C*-algebras over the last 30 years. A series of breakthroughs were made in 2015 through the classification results of Elliott, Gong, Lin, and Niu and the quasidiagonality theorem of Tikuisis, White, and Winter. Today, the classification conjecture is now a theorem under two additional regularity assumptions: \mathcal{Z} -stability and the UCT. I will discuss recent joint work with José Carrión, Jamie Gabe, Aaron Tikuisis, and Stuart White which provides a much shorter and more conceptual proof of the classification theorem in the stably finite setting.