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Huaxin Lin* (hlin@uoregon.edu), Department of Mathematics, University of Oregon, Eugene, OR 97403. *Classification of simple amenable C^* -algebras of stable rank one.*

A unital separable commutative C^* -algebra is isomorphic to the algebra of all continuous functions on a compact metric space X . Given an (infinite) compact metric space and a minimal homeomorphism $\alpha : X \rightarrow X$, the associated C^* -algebra can be identified as a crossed product of $C(X)$ with \mathbb{Z} . It is a unital separable simple C^* -algebra. The so-called Elliott program is to give a complete K -theoretic invariant for unital separable simple amenable C^* -algebras. We will report some progresses in the classification of simple amenable C^* -algebras in recent years and their applications. (Received February 18, 2008)