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**Huaxin Lin\*** ([hlin@uoregon.edu](mailto: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)