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Julian M Buck* (jbuck@fmarion.edu), 232 Waccamaw Avenue, Columbia, SC 29205. *Crossed Products of Certain Non-Simple Non-Commutative C*-Algebras.*

The study of crossed product C*-algebras arising from minimal homeomorphisms of compact metric spaces (that is, where the underlying algebra is commutative) has been a major area of success in the classification program for nuclear C*-algebras. The work of H. Lin, Q. Lin, and N.C. Phillips has demonstrated that such crossed products have tracial rank zero, and are thus classifiable, given sufficient assumptions about their K-theory. A recent paper of A. Toms and W. Winter proved that crossed products by minimal homeomorphisms are stable under tensoring with the Jiang-Su algebra.

In this talk we discuss the problem of studying crossed product of C*-algebras where the underlying algebra is the space of continuous functions from a compact metric space X into some abstract C*-algebra A . This algebra is neither simple nor commutative, so techniques from the commutative case must be adapted to this new setting in order to study the resulting crossed product. We consider the important question of whether the crossed product has a well-behaved order structure for its Cuntz semigroup, a key piece of classification data. (Received September 22, 2010)