

1023-46-1408

Bogdan Costin Visinescu* (visinebc@email.uc.edu), 4724 Williamsburg Rd NW, Cincinnati, OH 45215. *Topological Structure of the Unitary Group of Certain C*-Algebras.*

Let $0 \rightarrow B \rightarrow E \rightarrow A \rightarrow 0$ be a short exact sequence of C*-algebras where A is a purely infinite simple C*-algebra and B is an essential ideal of E. In the case B is the compacts or a non unital purely infinite simple C*-algebra we completely determine the homotopy groups of the unitary group of E in terms of K-theory. The result can be viewed as a generalization of the well-known Kuiper's theorem to a new class of C*-algebras (including certain separable C*-algebras). We are also going to describe the reduced C*-algebras generated by free products of cyclic groups and a projection. (Received September 26, 2006)