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José R. Carrión* (jcarri@math.purdue.edu), Department of Mathematics, Purdue University, West Lafayette, IN 47907. *G-odometers and classification of C^* -algebras.*

A (discrete) residually finite group G acts on a profinite completion \tilde{G} by left translation. These G -odometers generalize the notion of an odometer corresponding to the case $G = \mathbb{Z}$. We study the classification of the corresponding crossed product C^* -algebra $C(\tilde{G}) \rtimes G$ via K -theoretical invariants.

The eponymous C^* -algebras considered by Bunce and Deddens in the 1970s may be regarded as the case $G = \mathbb{Z}$ and, in analogy with this case, the so-called generalized Bunce-Deddens algebra $C(\tilde{G}) \rtimes G$ was shown by Orfanos to be simple, separable and nuclear, and to have real rank zero and stable rank one. We show that for a large class of groups (which includes the discrete Heisenberg group, for example) the corresponding generalized Bunce-Deddens algebra is classified by its Elliott invariant. (Received August 23, 2011)