

# Inductive limits of inner actions on approximate interval algebras generated by elements with finite spectrum

Andrew J. Dean

*Department of Mathematical Sciences Lake head University, 955 Oliver Road,  
Thunder Bay, Ontario, Canada P7B 5E1*

*e-mail: andrew.j.dean@lakeheadu.ca*

*Communicated by: George Elliot*

Received: September 29, 2006

**Abstract.** In this paper we present a classification for  $C^*$ -dynamical systems  $(A, \mathbb{R}, \alpha)$  of the following form. There exists a sequence  $\{A_n\}$  of  $C^*$ -algebras each isomorphic to a finite direct sum of matrix algebras over the unit interval, actions  $\alpha_n$  of  $\mathbb{R}$  on  $A_n$  generated by elements with finite spectrum, and equivariant connecting  $*$ -homomorphisms  $\varphi_{nm} : A_n \rightarrow A_m$  satisfying a certain technical assumption, such that  $(A, \mathbb{R}, \alpha)$  is the limit of the inductive system  $\{(A_n, \alpha_n), \varphi_{nm}\}$ .

2000 *Mathematics subject classification.* Primary 46L57; Secondary 46L35