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Classification of certain inductive limit actions of compact groups on AF algebras

An action of a compact group on an AF algebra is called an inductive limit action, if there is a sequence of finite-dimensional subalgebras, each of which is invariant under the action, whose union is dense. If the restrictions on the finite-dimensional subalgebras are inner (induced by representations of the group), then such actions are classified by equivariant K-theory, by the result of David Handelman and Wulf Rossmann. We shall show that equivariant K-theory is not enough to classify if the restrictions on finite dimensional C^* -algebras are not inner, and give a complete classification of a more general class of inductive limit actions by introducing some new invariants.