

Using results from dynamical systems to classify algebras and C^* -algebras

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Abstract: In the subject of symbolic dynamics, the shift spaces of finite type arise as edge shifts of finite directed graphs. The classification of these shift spaces was used in the 1980's to classify certain C^* -algebras constructed from directed graphs, known as Cuntz-Krieger C^* -algebras, and moreover, the dynamical systems methods were key ingredients in the proofs. More recently, similar techniques have been used to classify certain algebras constructed from directed graphs, which are known as Leavitt path algebras. In this talk I will give an overview of the dynamical systems results, describe how they have led to methods for classifying C^* -algebras and algebras, and discuss the current status of these classification programs and existing open problems.