Auslander's Theorem for Permutation Actions on Noncommutative Algebras

Let G be a small finite group acting linearly on a polynomial ring A over an algebraically closed field of characteristic zero. A famous theorem of Auslander asserts that the skew group algebra A♯G is isomorphic to the algebra of endomorphisms of A over the fixed ring of A by G. This result is intimately connected to the McKay correspondence and the study of graded isolated singularities. Two natural generalizations of this problem are to replace A with a noncommutative algebra or G with a Hopf algebra. Until recently there has been progress only when A has low (global) dimension. In this talk, I will discuss some of the history of this problem, the pertinency invariant developed by Bao, He, and Zhang, as well as joint work with Kirkman, Moore, and Won in extending Auslander's Theorem to permutation actions on certain noncommutative algebras.

Light Refreshments will be served at 1:30pm in E424A

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