

ALGEBRA SEMINAR

Noncommutative Symmetric Groups in Noncommutative Projective Algebraic Geometry

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ABSTRACT: In group theory, the symmetry group of a geometric object is the group of all transformations under whose action the object is invariant. It is a principle that the very nature of the symmetric group decodes the fundamental geometry of the space, such as in theoretic physics, the Lorentz transformations reveal Einstein's famous special theory of relativity in the Minkowski spacetime. The speaker with Chelsea Walton has extended the principle to noncommutative projective algebraic geometry, where the approach is to bring one of Manin's universal quantum groups as the noncommutative symmetric group of an Artin-Schelter (AS) regular algebra. These noncommutative symmetric groups have deep relations with noncommutative invariant theory and quantum symmetry. In this talk, some basic concepts and questions will be discussed together with the recent progress in the case of AS-regular algebras of dimension two.

MONDAY, OCTOBER 5, 2015
1:30 – 2:30 PM
ROOM 617, WACHMAN HALL
DEPARTMENT OF MATHEMATICS