MATHEMATICS DEPARTMENT
North Carolina State University

ALGEBRA SEMINAR

Friday, September 9, 2005

Professor Irina Kogan

NC State University

Rational, Replacement and Local Invariants

ABSTRACT: I will provide a link between the theory of rational invariants of algebraic group actions on affine spaces and the theory of local invariants of Lie group actions on smooth manifolds. Algorithms for constructing rational and replacement invariants will be presented. The replacement invariants are tuples of algebraic functions of rational invariants, such that any invariant can be rewritten in terms of those by a simple substitution of variables with the corresponding invariant from the tuple. The proposed algorithms can be seen as an algebraic counterpart of the Fels and Olver moving frame construction for local smooth invariants on a differential manifold. They rely solely on Groebner bases computations and can be easily implemented in any computer-algebra system. This is a joint work with E. Hubert, INRIA, France.

3:00 - 3:50 pm HA 335

Faculty and Students are invited to attend.