



DEPARTMENT OF
MATHEMATICS
Illinois State University

Algebra Seminar

Title: Matrix Invariants and Complexity

Speaker: Harm Derksen,

Department of Mathematics, University of Michigan

Location: STV 347B

Time: 1:00 pm - 1:50 pm on Thursday (11/14/2019)

Abstract: The group $SL_n \times SL_n$ acts on m -tuples of $n \times n$ matrices by simultaneous left-right multiplication. Visu Makam and the speaker proved that the ring of invariants is generated by polynomials of degree $< mn^4$, improving a super-exponential bound. This result has applications to algebraic complexity such as a polynomial time algorithm for non-commutative rational identity testing and the non-commutative Edmonds' problem.