

Graduiertenkolleg

# Experimentelle und konstruktive Algebra



Im Rahmen des Graduiertenkollegs *Experimentelle und konstruktive Algebra* hält

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eine

## Vortragsreihe

*Polynomial Invariants of Several Matrices under the Conjugation Action.*

Termine:

Der erste Vortragstermin ist:

Dienstag, 31. Januar 2012, 10:00 Uhr, Seminarraum SG 512 (Seminargebäude)

Die Termine der Folgevorträge werden noch vereinbart.

Abstract:

The general linear group of degree  $n$  acts by conjugation  $m$ -tuples of  $n$  by  $n$  matrices by conjugation. This action occurs naturally in various diverse classification problems. We shall discuss the problem of determining the algebra of polynomial invariants for this action. In particular we shall describe a generating set for this algebra in terms of trace functions on product of matrices. In characteristic zero the result is due to SIBIRSKI and PROCESI. In positive characteristic the result requires some sophisticated representation theory.

We shall work over an algebraically closed field. In the first lecture we shall describe the classical (characteristic 0) using connections with the symmetric group. In the later lectures we will discuss the ways in which this can be refined to deal with positive characteristic.