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Leibniz
Universität
Hannover

Oberseminar zur Algebra und Algebraischen Kombinatorik

Paul Mücksch
(TU Kaiserslautern)

"Invariant quadratic forms on irreducible representations of simple algebraic groups in characteristic 2"

The structure theory of simple algebraic groups is well understood and they were classified by Chevalley in the 1950s. But there are still open questions about the subgroup structure of simple algebraic groups.

In this talk we will try to give a partial answer which simple algebraic groups occur as closed subgroups of the simple algebraic groups of type Sp_{2n} and SO_{2n} defined over an algebraically closed field of characteristic 2, by computing invariant symplectic and quadratic forms on (rational) representations of the various simple algebraic groups.

First we will revisit some basic definitions and facts from the theory of algebraic groups and their representation theory. Then we will discuss symplectic and quadratic forms in even characteristic. Invariant symplectic and quadratic forms on (modular) representations of finite groups can be computed with algorithms. Such invariant forms (if they exist) on the representations of a finite group of Lie type lead to invariant forms of the corresponding rational representations of the algebraic group. Finally, we will comment on some computed tables and the existence of the forms depending on the type of the simple algebraic group and the highest weight of its restricted representation.

Mittwoch, 18.06.2014
ab 16:00 Uhr, Raum a410

Hauptgebäude der Leibniz Universität Hannover

Alle Interessierten sind herzlich eingeladen.

gez. Prof. Dr. C. Bessenrodt, Prof. Dr. M. Cuntz, Prof. Dr. U. Derenthal

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