Institut für Mathematik

Einladung zum Algebra-Seminar Halle-Jena

Dienstag, 7. Januar 2020
SR 3517, Ernst-Abbe-Platz 2, Etage 5

14:15-15:15 Uhr   *Andriy Regeta (FSU Jena),*
On the Lie algebras of vector fields of smooth affine surfaces

Abstract: In this talk we will study the Lie algebra of volume preserving vector fields on affine plane. We will show that this algebra is simple and study its finite-dimensional subalgebras. At the end we will discuss some interesting subalgebras of the Lie algebras of vector fields on the so-called Danielewski surfaces.

15:15-15:45 Uhr   Kaffeepause

15:45-16:45 Uhr   *Imke Toborg (MLU Halle-Wittenberg),*
Isolated elements of order p in finite groups without elementary abelian subgroups of order p^3

Abstract: Let p be an odd prime, and let G be a finite group which does not contain elementary abelian subgroups of order p^3. Moreover, let $x \in G$ be an element of order p such that $x^G \cap C_G(x) = \{x\}$. Then $G = C_G(x) \cdot O_{p'}(G)$, or $F^*(G/O_{p'}(G))$ is simple. In the second case we will investigate the structure of a Sylow p-subgroup and determine it precisely in case $p=3$.

17:00-18:00 Uhr   *Susanne Danz (KU Eichstätt),*
On Ext-quivers of weight-2 blocks of symmetric groups

Blocks of symmetric groups of weight 2 over fields of odd characteristic p have been studied a lot. Thanks to work of Scopes, Martin, Richards and others the structure of these blocks is now comparatively well understood.
In 1995 Scopes, for instance, proved that all decomposition numbers of a block of weight 2 are at most 1, and the Ext-space of two simple modules is at most one-dimensional. Her proof (in principle) also provides an algorithm to compute the Ext-quiver of any given weight-2 block. In this talk we shall combine this with results of Richards and Chuang--Tan, in order to explicitly determine the Ext-quivers of all weight-2 blocks whose p-cores are hook partitions. As a consequence, we shall also gain information on possible Morita equivalences between different blocks of weight 2. This is joint work with Karin Erdmann.

18:15 Uhr   Abendessen im Restaurant „Saigon"
Johannisplatz 18-19, Jena

Alle Interessenten sind herzlich eingeladen.