Oberseminar zur Algebra

Lehrstühle A und D für Mathematik

Vortragsankündigung

Zeit und Ort: **Donnerstag, 5. November 2009, 14.00 Uhr bis 15.30 Uhr** in Fo 6 (Kármán)

Vortragender: **Anne Shepler (RWTH Aachen and University of North Texas)**

Titel: **Finite groups acting linearly: Gerstenhaber brackets for skew group algebras**

Inhalt: Hochschild cohomology governs deformations of algebras, and its graded Lie structure plays a critical role. We explore this structure for a finite group G acting on an algebra A by automorphisms. The natural algebra capturing this action is the skew group algebra $A\#G$, a semidirect product of A and G. For example, when G acts linearly on a complex vector space V, it induces an action on the symmetric algebra $S(V)$, a polynomial ring. Deformations of the skew group algebra $S(V)\#G$ generated by G and $S(V)$ play a prominent role in representation theory. Such deformations include graded Hecke algebras (orginally defined independently by Drinfeld and by Lusztig), symmplectic reflection algebras (investigated by Etingof and Ginzburg in the study of orbifolds), and rational Cherednik algebras (inroduced to solve Macdonals' inner product conjectures). We explore the graded Lie structure (or Gerstenhaber bracket) of the Hochschild cohomology of skew group algebras with an eye toward deformation theory. For abelian groups acting linearly, this structure can be described in terms of inner products of group character. (Joint with Sarah Witherspoon.)

Wir laden alle Interessierten herzlich zu diesem Vortrag ein.