Seminar on Representation Theory and Algebraic Lie Theory

Jean-Marie Bois, Rolf Farnsteiner, Daiva Pucinskaite

The seminar takes place on Tuesdays 14:00 – 15:30, in Room 116 of the Mathematical Institute. How do I get to the university?

Be sure to check out the small seminar page: *Selected topics in Algebra and Representation theory* , Fridays at 11:00.

Next talk

Tuesday 22. June, 14:00 – 15:30

Yorck **Sommerhäuser**
(University of South Alabama)

Cauchy's Theorem for Hopf Algebras .

Abstract : Cauchyâ€™s theorem states that a ï¬ ˚nite group contains an element of prime order for every prime that divides the order of the group. Since the exponent of a group is the least common multiple of the orders of all its elements, this can be reformulated by saying that a prime that divides the order of a group also divides its exponent. It was an open conjecture by P. Etingof and S. Gelaki that this result, in this formulation, holds also for semisimple Hopf algebras. In this talk, we present a proof of this conjecture, which is joint work with Y. Kashina and Y. Zhu.

The talk is intended for a general audience; in particular, no knowledge of Hopf algebras will be assumed. We will therefore begin by explaining what a Hopf algebra is and how the exponent of a Hopf algebra can be deï¬ ˚ned. We will then explain how the analogue of Cauchyâ€™s theorem can be deduced from the theory of higher Frobenius-Schur indicators.

Upcoming programme

- 29. June: Jean-Marie **Bois**, *Burnside's theorem for Hopf algebras* .
- 06. July: Rolf **Farnsteiner**, t.b.a.
- 13. July: Eric **Henack**, t.b.a.

Previous talks

Summer term 2010

- 15. June: Gil **Vernik**, *Reduction results for enveloping algebras of Lie algebras in prime characteristics* .
- 08. June: Daiva **Pucinskaite**, *Ringel-duality on generator-cogenerators for local self-injective algebras* .
- 01. June: Julian **Külshammer**, *Small quantum groups are totally wild* .
- 18. May: Gil **Vernik**, *Enveloping algebras in positive characteristics* .
- 11. May: Bin **Shu** (Shanghai/Kiel), *The centers of the universal enveloping algebras of Lie superalgebras in prime characteristic* .
- 27. April: Julia **Worch**, *The strong no loop conjecture for special biserial algebras*.
- 20. April: Jean Marie **Bois**, *Weyl groups for non-classical restricted Lie algebras and applications* . The slides can be downloaded here.
- 13 April: Khalid **Rian** (Århus/Kiel), *Restricted Lie algebras and Cartan type algebras*.

Winter term 2009/2010

- 05. February: Siyka **Andreeva**, *Subgroup lattices of groups* .
- 29. January: Daiva **Pucinskaite**, *Quasi-hereditary algebras in Representation Theory*.
- 22. January 2010: Nils **Mahrt** (Bielefeld), *Full subcategories of hereditary categories which are tubes* .
- 15. January 2010: Julian **Külshammer**, *Biserial algebras and the finitistic dimension conjecture* .
- 08. January 2010: Julian **Külshammer**, *Quiver representations, Auslander-Reiten theory, and the knitting algorithm* .

- 18. December 2009: Olivier **Brunat** (Bochum), *On the inductive McKay condition* .
- 11. December 2009: Eric **Henack**, *The space of p-points* .
- 04. December 2009: Jean-Marie **Bois**, *Complexity of modules and the Friedlander-Suslin Theorem* . An extended version of the slides is available here .
- 27. November 2009: Daiva **Pucinskaite**, *Restricted Lie algebras* .
- 20. November 2009: Markus **Severitt** (Bielefeld), *Simple Representations of* $Aut(k[x_1,...,x_n]/(x_1^p,...,x_1^p))$. abstract
- 13. November 2009: Julia **Worch**, *Algebras of measures* .
- 06. November 2009: Christine **Schneider**, *Hopf algebras and group schemes* .

Archive

- 13th NWDR Workshop in Kiel, 05 – 06 June 2009.
- Mercator Seminar . Lectures by JM. Bois, S. Doty and R. Farnsteiner.
- Reading seminar on Schur algebras .

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