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from September 2007:

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Curriculum Vitae

Appointments, work experience

- 2007 - 2011 Assistant Professor SNF (Swiss National Science Foundation) at ETH Zurich, Switzerland
- 2005 - 2007 Research Associate at the Department of Mathematics, EPSRC grant, University of Leicester, United Kingdom.
- 2003 - 2005 Postdoctoral Researcher, University of California, San Diego, U.S.A.
- 2002 - 2003 Postdoctoral Assistant, ETH Zurich, Switzerland.
- 2002 Postdoctoral Researcher, University of Basel, Switzerland.

Education

- 2002 Ph.D., University of Basel. Thesis: *Two Contributions to the Representation Theory of Algebraic Groups*
Ph.D. Advisor: Professor Dr. Hanspeter Kraft.
- 1997 Diplom in Mathematics, Philosophy and Modern French Literature, Major in Mathematics, University of Zurich, Switzerland.
- 1996 Diploma Thesis: *Beispiel einer Überlagerungskonstruktion im komplexen projektiven Raum.*
Diplom Advisor: Professor Dr. Christian Okonek.

Research

Research Grants, Fellowships

- 2007 - 2011 SNF Fellowship as Assistant Professor at ETH Zurich
2004 Grant by Freie Akademische Stiftung, Switzerland
2003 - 2004 Postdoctoral Researcher at UCSD: Fellowship by SNF
1999 - 2002 Marie Heim-Vögtlin Fellowship by SNF

Long Research Visits

- Dec. 2006 Visiting scientist at Weizmann Institute, Israel
Nov. 2004 University of Leicester
April 2004 University of Leicester
Nov. 2001 Visiting Scholar, UCSD

Research Interests

Algebraic methods in representation theory of Lie groups and Lie algebras:

Orbit structures in irreducible representations: adjoint representation, parabolic subgroups, Richardson orbits.

Cluster algebras and cluster categories, m-cluster categories, triangulated categories.

Categorification of representations.

Secant varieties of orbital varieties, tropical geometry.

Quasi-hereditary algebras.

List of Publications

1. *A geometric description of the m -cluster categories of type D* (with R. Marsh), to appear in International Mathematical Research Notes.
2. *Richardson elements for parabolic subgroups of classical groups in positive characteristic* (with S. Goodwin), to appear in J. Algebra and Representation Theory.
3. *A geometric construction of m -cluster categories* (with R. Marsh), to appear, Transactions of the AMS.
4. *A class of gradings of simple Lie algebras* (with N. Wallach), to appear, Cont. Math., AMS.
5. *Secant Dimensions of Minimal Orbits: Computations and Conjectures* (joint with J. Draisma, W. de Graaf), to appear in Journal of Experimental Mathematics.
6. *Richardson elements for the classical Lie algebras*, Journal of Algebra, **297/1**, 2006, 168-185.
7. *Periodicity and growth in a lattice gas with dynamical geometry* (with J. Rabin, D. Meyer), Physical Review E, 73, 026129 (2006).
8. *Richardson elements and birationality questions*, in Enveloping algebras and geometric representation theory, Oberwolfach Rep. 2, no. 1, 2005, 723-777.
9. *A normal form for admissible characters in the sense of Lynch*, Represent. Theory, **9**, 2005, 30-45.
10. *Nice Parabolic Subalgebras of Reductive Lie Algebras* (with N. Wallach), Represent. Theory **9**, 2005, 1-29.
11. *Higher secant varieties of the minimal adjoint orbit* (with J. Draisma), Journal of Algebra, **280/2**, 2004, 743-76.
12. *Cartan components and decomposable tensors*, Transformation Groups, **8**, no. 4, 2003, 309-319.

Submitted

A Note on Frieze Patterns of Cluster Variables (with Robert Marsh).

Recent Conference Talks

- *BIRS, Workshop on algebraic Lie theory*, Banff, Canada, May 2007
- *BMC, Session Combinatorial Algebra/Representation Theory*. Swansea, April 2007.
- *BLOC, Bristol-Leicester-Oxford Colloquium*. Leicester, February 2007.
- *Workshop on Representation Theory of Lie algebraic Systems*. Weizmann Institute, Rehovot, December 2006.
- *LMS Meeting on non-commutative geometry of Hopf algebras and Hopf algebroids*. Warwick, UK, 17th June 2006.
- *Lie Days in Martina Franca*, Martina Franca, Italy, May 2006.
- *Conference on Geometric Representation and Invariant Theory, Algebraic Quantization and Deformations*. Spa, Belgium, 2005 (ESF Research Conference).
- *UCB-UCSB Algebra Day*, UCSB, Santa Barbara, CA, June 2005.
- *Lie Algebras, Vertex Operator Algebras and Their Applications*. North Carolina State University, Raleigh, NC, May 2005.
- *Workshop on Enveloping Algebras and Geometric Representation Theory*. Mathematisches Forschungsinstitut Oberwolfach, Germany, March 2005.
- *Workshop on Geometric Lie Theory*. Lauterbad, Germany, October 2004.
- *AGAG2004, Conference on Algebraic Geometry and Algebraic Groups*. University of Aarhus, Denmark, June 2004.

Recent Seminar Talks

- *Department of Mathematics, Glasgow*: Algebra Seminar, July 2007.
- *School of Mathematics, Manchester*: Cluster Algebras Reading Group, June 2007.
- *University of East Anglia, Norwich*: Pure Mathematics Seminar, March 2007
- *EPFL, Lausanne, Switzerland*: Séminaire de Théorie de Groupes, January 2007.
- *Weizmann Institute, Rehovot*: Seminar on Representation Theory and Algebraic Geometry, December 2006.
- *City University, London*: Mathematics Seminar, November 2006.

- *University of Southampton*: Pure Mathematics Seminar, June 2006.
- *University of Manchester*: Algebra Seminar, May 2006.
- *University of Leeds*: Algebra Seminar, April 2006.
- *University of Leicester*: Colloquium in Pure Mathematics, March 2006.
- *Mathematical Institute, Oxford*: Representation Theory Seminar, February 2006.
- *Warwick Mathematics Institute*: Algebraic Geometry Seminar, November 2005.
- *University of Bielefeld*: Seminar Darstellungstheorie, July 2005.
- *Institut Fourier, CNRS/Université J. Fourier*: Séminaire d'Algèbre et de Géométrie, March 2005.
- *University of California at San Diego*: Representation Theory Seminar/Lie Groups Seminar, Seminar in Quantum Computing, 2004.
- *University Basel*: AG Algebra und Topologie; Graduate Seminar, 2004, 2005.
- *ETH Zurich*: Seminar Algebra und Topologie; Graduate Colloquium in Arithmetic and Geometry, 2004.
- *University of Leicester*: Colloquium in Pure Mathematics, November 2004.
- *University of Michigan at Ann Arbor*: Noncommutative Algebra Seminar, January 2004

Organising Conferences, Workshop, Seminars

- Organiser of the 40th meeting of BLOC, a joint meeting with ARTIN. Leicester, May 2007.
- Co-organiser of a workshop on Cherednik algebras, together with P. Etingof (MIT), V. Ginzburg (Chicago), I. Gordon (Edinburgh), A.E. Parker (Leicester) and C. Stroppel (Glasgow). It was held in June 2007 at the ICMS in Edinburgh, UK.
- I have held a workshop on my work on Richardson elements and parabolic subalgebras at the University of Leicester in May 2006.
- I have been the organiser of a research working seminar on cluster tilting theory, University of Leicester, 2005/2006.
- I have initiated a learning seminar on polytopes at the University of Leicester, 2005/2006.

Teaching Experience

Lectures

Leicester: Geometry of the plane (2006 and 2007, 40 students).

UCSD: Introductory Calculus (60 students).

ETH Zurich: Analysis (as a replacement lecturer in Winter 2002/03, 240 students).

Tutorials

Teaching Assistant at ETH Zurich, University of Basel: I have been a teaching assistant for courses on all levels, for students of Mathematics, of Sciences and for future secondary school teachers of Mathematics. The courses were:

Introduction to Transformation Groups, Geometry, Analysis, Linear Algebra, Algebra.

I have also been a coordinator for Linear Algebra at ETH Zurich. My duties included designing exercises and providing their solutions, maintaining the course webpage and composing the written exam for the year course.

Seminars

I was the organiser of the Representation Theory Seminar at UCSD from April 2004 to June 2005.

I have organised and run an informal seminar for graduate students and postdoctoral assistants at University Basel, 2002/03.

Outreach

I am a volunteer for enrichment activities at a local primary school.

Of further interest

Supervisor for 4th year projects in Mathematics w. Management, Leicester
Supervisor for a work placement student at the University of Leicester, 2007.

Other professional activities

Reviewer for Mathematical Reviews (AMS) since January 2004.

Professional affiliations

Swiss Mathematical Society, London Mathematical Society, British Combinatorial Bulletin, European Mathematical Society, European Women in Mathematics, American Mathematical Society.

Administration

Leicester: Participating at Departmental Meetings, at UCAS/open days, at meetings of the group in Pure Mathematics.

ETH Zurich: Representative of the assistants (Mittelbau), Department of Mathematics.

Basel: Representative of the PhD students and assistants at the Faculty of Science.
Member of the committee for the evaluation of the Mathematics Curriculum.

Of further interest

I served as external examiner for Matura at Wirtschaftsgymnasium Basel, Switzerland ("Matura" is the series of final exams at Swiss secondary schools which is used as university entrance qualification. I.e. they are roughly equivalent to British A-levels).