

Curriculum Vitae

SEBASTIAN M. BURCIU

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Education:

- 1999-2005, Ph.D. in Mathematics, Syracuse University.
- 1997-1999, M.Sc. in Mathematics, University of Bucharest.
- 1993-1997, B.S. Major: Mathematics, University of Bucharest.

Employment:

- 2006-present, Researcher - Institute of Mathematics "Simion Stoilow" of the Romanian Academy.
- 2005-2006 Teaching Postdoctoral Fellow, Syracuse University.

Research Interests:

- Representation Theory
- Hopf algebras
- Homological algebra
- Algebraic groups

Publications:

1. *Normal Hopf subalgebras of semisimple Hopf Algebras*,
Proc. Amer. Math. Soc. **137** (2009), 3969-3979.
2. *Hopf Galois Extensions and Integrals*,
Sci. Bull. Ser. A Appl. Math. Phys. 60 (1998), no. 3-4, 37-48.
3. *Three Dimensional Representations of Semisimple Hopf Algebras*,
J. Pure and Appl. Alg. **194** (2004), 303-312.
4. *On some Representations of the Drinfel'd Double*,
J. Alg. **296** (2006) 480-504.
5. *A class of quantum doubles which are ribbon algebras*,
J. Alg. **320** (2008), 2053-2078.
6. *Hochschild cohomology of smash products and rank one Hopf algebras*,
(with S. Witherspoon) (in Proceedings of the XVI Coloquio Latinoamericano de Álgebra.) (math.RA/0608762.)
7. *Depth Two Hopf Subalgebras of Semisimple Hopf algebras*,
(with L. Kadison) J. Algebra, **322** (2009) 162-176.
8. *Coset decomposition for semisimple Hopf algebras*,
(to appear Comm. Alg.)(arXiv: 0712.1719)
9. *Clifford theory for cocentral extensions*,
(to appear Israel Journal of Mathematics)(arXiv:0901.1542)
10. *Subgroups of depth three and more*,
(with L. Kadison) "Noncommutative Structures in Mathematics and Physics", S. Caenepeel, J. Fuchs and A. Stolin (eds.), Proc. Royal Flemish Academy of Belgium,, Brussels, 2009, 29-45. (arXiv:0901.3039)
11. *Fusion rings arising from normal Hopf subalgebras*, (with V. Pasol), to appear in Algebra Repres. Th. (arXiv:0903.3817).
12. *Character theory for semisimple Hopf algebras*,
(submitted)(arXiv:0811.3738)

13. *Quantum doubles of rank two pointed Hopf algebras*,
(submitted)(arXiv:0705.3275)
14. *Depth of subgroups and multimatrix algebra inclusions*,
(with L. Kadison and B. Külshammer) (submitted)(arXiv:0906.0440).

Teaching Experience:

Courses - Syracuse University (1999-2006):

- Calculus (I, II, III) for Engineering.
- Calculus for Business.
- Calculus for Arts & Sciences.
- Introduction to Statistics (with Minitab applications).
- Introduction to Linear Algebra.

Recitations - Syracuse University (1999-2006):

- Introduction to Linear Algebra.
- Calculus (I, II & III).
- Introduction to Statistics.
- Differential Equations and Matrix Algebra for Engineers

Recitations - University of Bucharest (1997-1999) and (2007 - 2008):

- Linear Algebra.
- Rings and Modules.
- Number theory: an introduction.

Recitations - Polytechnic University of Bucharest (1997-1999):

- Calculus I.
- Calculus II.
- Differential Equations.

Honors and Awards:

- Graduate Student Fellowship
Syracuse University, 1999-2000, 2003-2004.
- Departmental Summer Fellowship
Syracuse University, Summer 2000, 2003, 2004.
- European Union Student Fellowship
Vrije Universiteit of Brussels, Belgium, Spring 1998-1999.

Talks and Colloquia:

- “Drinfeld doubles that are ribbon algebras”,
Noncommutative Structures in Mathematics and Physics, July 2008,
Brussels, Belgium.
- “Quantum doubles of pointed Hopf algebras of rank two”,
6-th Congress of Romanian Mathematicians, June 28 - July 4, 2007,
Bucharest, Romania.
- “On some representations of the Drinfeld Double”,
AMS National Meetings, Atlanta, January 5-8, 2005.
- “Drinfeld doubles and the adjoint representation”,
Algebra Seminar, Syracuse University, November 2004.
- “Representations of Degree Three for Semisimple Hopf Algebras”,
Algebra Seminar, Syracuse University, September 2004.
- “On some Representations of the Drinfel’d Double”,
CMS/CAIMS Summer 2004 Meeting, June 2004, Halifax, Canada.
- “Braided Hopf Algebras”- MGO Conference, Syracuse, April 2001.
- “Integrals and Hopf Galois Extensions” ,
MGO Colloquium, Syracuse, September 2000.
- “Semisimple Hopf Algebras and Kaplansky’s Sixth Conjecture”
Algebra Seminar, University of Bucharest, December 1999.
- “Hopf Galois Extensions”-Algebra Seminar, Syracuse, September 1999.

Other Professional Activities:

- Administrator: Mathematics Placement Tests, Fall 2004.
- Participant of Future Professoriate Program, 2004.
- Tutor: Mathematics Clinic Table, All classes, Summer 2000.
- Designer WebWork Homework Set, using Perl, Spring 2000.
- Referee for Proceedings of the Conference:
“Group, Rings and Algebras”, June 10- 12, 2005, University of Wisconsin-Madison.

Computer Skills

- C, C++, LaTeX, MINITAB, MATLAB.