

Curriculum vitae (April 2011)

MIKHAIL ERSHOV

University of Virginia
Department of Mathematics
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Professional preparation

M.A. in Mathematics, Brandeis University, February 2000

Ph.D. in Mathematics, Yale University, May 2005

Member of the School of Mathematics, Institute for Advanced Study,
September 2005 - June 2006

L.E. Dickson Instructor, Department of Mathematics, University of Chicago,
August 2006 - August 2007

Ph.D. Advisors: Efim Zelmanov, University of California San Diego and
Gregory Margulis, Yale University

Ph.D. Title: On finite presentability of some pro- p groups and related questions

Appointments

Assistant Professor, Department of Mathematics, University of Virginia,
August 2007 - present

Synergistic activities

Referee for Communications in Algebra, Duke Mathematical Journal, Journal of Algebra, Journal of Pure and Applied Algebra, Journal of Topology and Analysis

Organizer of the Algebra Seminar at the University of Virginia, Fall 2008-Fall 2010

Co-organizer of the special session on “Arithmetic and profinite groups” at the AMS sectional meeting at the Pennsylvania State University, October 2009

Co-organizer of the workshop on “Arithmetic groups and their applications in combinatorics, geometry and topology” at the University of Virginia, April 2010

Co-organizer of the Math Club at the University of Virginia, 2009-2010

Member of the Graduate Admission Committee, Department of Mathematics, University of Virginia, 2008-2009

Honors and Awards

NSF Grant DMS-0901703, 2009-2012

Prize Teaching Fellowship, Yale University 2003/2004 and 2004/2005 (award for excellence in teaching)

Russian Math Olympiad. Third degree prize, 1993 and 1994

Publications

1. On distortion of subsemigroups, *Moscow University Bulletin* 1999, no. 4, 36-38
2. New just-infinite pro- p groups of finite width and subgroups of the Nottingham group, *Journal of Algebra* 2004, no. 275(1), 419-449
3. The Nottingham group is finitely presented, *Journal of the London Mathematical Society* 2005, no. 71(2), 362-378
4. On subgroups of the Nottingham group of positive Hausdorff dimension, *Communications in Algebra* 2007, no. 35(1), 193-206
5. Finite presentability of $SL_1(D)$, *Israel Journal of Mathematics* 2007, no. 158, 297-347
6. Abstract simplicity of complete Kac-Moody groups over finite fields, with Lisa Carbone and Gordon Ritter, *Journal of Pure and Applied Algebra* 2008, no. 212(10), 2147-2162
7. Golod-Shafarevich groups with property (T) and Kac-Moody groups, *Duke Mathematical Journal* 2008, no. 145(2), 309-339
8. Property (T) for noncommutative universal lattices, with Andrei Jaikin-Zapirain, *Inventiones Mathematicae* 2010, no. 179(2), 303-347
9. On the commensurator of the Nottingham group, *Transactions of the American Mathematical Society* 2010, no. 362(12), 6663-6678
10. Kazhdan quotients of Golod-Shafarevich groups, with appendices by Andrei Jaikin-Zapirain, *Proceedings of the London Mathematical Society*, 2011, no. 102(4), 599-636
11. The congruence subgroup property for $\text{Aut } F_2$: A group-theoretic proof of Asada's theorem, with Kai-Uwe Bux and Andrei Rapinchuk, *Groups, Geometry and Dynamics*, 2011, no. 5(2), 327-353
12. Abstract commensurators of profinite groups, with Yiftach Barnea and Thomas Weigel, *accepted by Transactions of the American Mathematical Society*, arXiv: 0810.2060, 37 pages

13. On the second cohomology of the norm one group of a p -adic division algebra, *preprint (2008)*, available at <http://people.virginia.edu/~mve2x/Research>, 33 pages
14. Kazhdan groups whose FC -radical is not virtually abelian, *preprint (2010)*, available at <http://people.virginia.edu/~mve2x/Research>, 3 pages
15. Groups of positive weighted deficiency and their applications, with Andrei Jaikin-Zapirain, *submitted for publication*, arXiv: 1007.1489, 46 pages
16. Property (T) for groups graded by root systems, with Andrei Jaikin-Zapirain and Martin Kassabov, arXiv: arXiv:1102.0031, 78 pages

Courses taught

At University of Virginia:

Fall 2010: Group Theory (graduate)
 Fall 2010: Survey of Algebra
 Spring 2010: Algebra-II (graduate)
 Fall 2009: Algebra Seminar
 Fall 2009: Algebra-I (graduate)
 Spring 2009: Algebra-II (graduate)
 Fall 2008: Algebra-I (graduate)
 Spring 2008: Survey of Algebra
 Fall 2007: Survey of Algebra

At University of Chicago:

Spring 2007: Analysis in \mathbb{R}^n -III.
 Spring 2007: Honors Calculus-III
 Winter 2007: Honors Calculus-II
 Fall 2006: Honors Calculus-I

At Yale University:

Fall 2004: Multivariable Calculus.
 Fall 2003: Differential Calculus of One Variable
 Fall 2002: Integral Calculus of One Variable
 Fall 2001: Differential Calculus of One Variable

Seminar and conference talks

Group Theory International Webinar. March, 2011

University of Michigan, *Groups Theory, Lie Theory and Number Theory Seminar*.
 March, 2011

Yale University, *Dynamics of Group Actions Seminar*. February 2011

MFO Oberwolfach, *Meeting on "Actions and Invariants of Residually Finite Groups: Asymptotic Methods"*. September 2010

CRM Montreal, *Workshop on “Geometric, Asymptotic, Combinatorial Group Theory with Applications”*. August 2010

Yale University, *Colloquium*. February 2010

Vanderbilt University, *Topology and Group Theory Seminar*. September 2009

Oxford University, *Algebra Seminar*. June 2009

Imperial College, London, *Algebra Colloquium*. June 2009

Rutgers University, *Colloquium*. April, 2009

Stevens Institute of Technology, *Conference on “Geometric and asymptotic group theory with applications.”* March, 2009

Yale University, *Algebra and Lie Groups Seminar*. March, 2009

University of Virginia, *Algebra Seminar*. January, 2009

Cornell University, *Topology and Geometric Group Theory Seminar*. December, 2008

Institute for Pure and Applied Mathematics, *Conference on Expanders in Pure and Applied Mathematics*, February, 2008

University of Virginia, *Algebra Seminar*. February, 2008

University of Illinois, *Geometry and Topology Seminar*. April, 2007

University of Wisconsin, *Conference on pro-p groups and pro-p algebras*. April, 2007

University of Chicago, *Geometry and Topology Seminar*. February, 2007

Penn State University, *Algebra and Number Theory Seminar*. January, 2007

University of Virginia, *Colloquium*. January, 2007

University of Michigan, *Groups and Lie Theory Seminar*. October, 2006

University of Chicago, *Group Theory Seminar*. October, 2006

Vanderbilt University, *Conference on Combinatorial and Geometric Group Theory*. May, 2006

University of Virginia, *Algebra Seminar*. March, 2006

University of Virginia, *Colloquium*. March, 2006

Institute for Advanced Study, *Lie Groups and Representation Theory Seminar*. March, 2006

Rutgers University, *Group Theory Seminar*. December, 2005

Institute for Advanced Study, *Members Seminar*. November, 2005

Cornell University, *Geometric Group Theory Seminar*. October, 2005

Institute for Advanced Study, *Short Talks*. October, 2005

AMS Conference in Newark, DE. Special session *Arithmetic groups and related topics*.
April, 2005

Yale University, *Algebra and Lie Groups Seminar*. October, 2004

Yale University, *Graduate Student Colloquium*. August, 2004

AMS Conference in Binghamton, NY. Special session *Infinite groups and group rings*.
October, 2003

Yale University, *Algebra Seminar*. February, 2003