

CURRICULUM VITAE

DMITRIY S. BOYARCHENKO (MITYA BOYARCHENKO)

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1. CONTACT AND PERSONAL INFORMATION

- Born: October 8, 1982
- Citizenship: Russian
- US Permanent Resident
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2. PROFESSIONAL EDUCATION AND POSITIONS HELD

- 2009–present** University of Michigan, Ann Arbor, MI
Assistant Professor, Department of Mathematics
- 2007–2009** The University of Chicago, Chicago, IL
L.E. Dickson Instructor, Department of Mathematics
- 2002–2007** The University of Chicago, Chicago, IL
Ph.D. in Mathematics, June 2007
- 1999–2002** University of Pennsylvania, Philadelphia, PA
M.A. in Mathematics, June 2002
B.A. in Mathematics, June 2002

3. TEACHING EXPERIENCE

2003–2004

- College Fellow in Mathematics, University of Chicago
Mathematics 207, 208, 209: Honors Analysis; mentor: P.J. Sally, Jr.
- Mentor in the Directed Reading Program, Department of Mathematics, University of Chicago, Spring 2004.

2004–2005 Instructor in Mathematics, University of Chicago:

- Autumn 2004: Mathematics 151 (Calculus-1)
- Winter 2005: Mathematics 152 (Calculus-2)
- Spring 2005: Mathematics 153 (Calculus-3)

2005–2006 Instructor in Mathematics, University of Chicago:

- Autumn 2005: Mathematics 152 (Calculus-2)
- Winter 2006: Mathematics 153 (Calculus-3)
- Autumn 2005: Mentor in the Directed Reading Program

2006–2007 (I was supported by VIGRE, so I had no formal teaching obligations)

- Mentor in the Directed Reading Program, Department of Mathematics, University of Chicago, Spring 2007.
- Co-organizer of a mini-course on the Weil Conjectures for undergraduate students taught by A.A. Beilinson, Spring 2007.
- Mentor in the REU Program at the University of Chicago, Summer 2007.
- Co-organizer of a mini-course on Homological Algebra for undergraduate students taught by A.A. Beilinson, Summer 2007.

2007–2008 (I was supported by the NSF, so I had no formal teaching obligations)

Co-organizer of a course on Class Field Theory for undergraduate and graduate students taught by A.A. Beilinson, Autumn 2007. See

<http://www.math.lsa.umich.edu/~mityab/beilinson/>

2008–2009 (I was supported by the NSF, so I had no formal teaching obligations)**2009–2010** Assistant Professor of Mathematics, University of Michigan:

- Mathematics 395: Honors Analysis I, Fall 2009
- Mathematics 396: Honors Analysis II, Winter 2010
- I organized and gave lectures in the Kottwitz Seminar for students:
<http://www.math.lsa.umich.edu/seminars/kottwitz/>

4. PUBLICATIONS AND PREPRINTS

4.1. **Published articles.** The published versions of all the articles listed below are available at <http://www.math.lsa.umich.edu/~mityab/research.html>

- (1) (with Alexei Borodin) *Distribution of the first particle in discrete orthogonal polynomial ensembles*, Communications in Mathematical Physics, Vol. 234 (2003), pp. 287–338.
- (2) (with Oren Ben-Bassat) *Submanifolds of generalized complex manifolds*, Journal of Symplectic Geometry, Vol. 2, No. 3 (2004), pp. 309–355.
- (3) (with Sergei Levendorskii) *Generalizations of the classical Weyl and Colin de Verdière’s formulas and the orbit method*, Proceedings of the National Academy of Sciences, Vol. 102, No. 16 (2005), pp. 5663–5668.
- (4) (with Mohammed Abouzaid) *Local structure of generalized complex manifolds*, Journal of Symplectic Geometry, Vol. 4, No. 1 (2006), pp. 43–62.
- (5) (with Sergei Levendorskii) *Beyond the classical Weyl and Colin de Verdière’s formulas for Schrödinger operators with polynomial magnetic and electric fields*, Annales de l’Institut Fourier, Tome 56, No. 6 (2006), pp. 1827–1901.
- (6) *Quantization of minimal resolutions of Kleinian singularities*, Advances in Mathematics, Vol. 211 (2007), pp. 244–265.
- (7) (with Maria Sabitova) *Centralizers of generic elements of Newton strata in the adjoint quotients of reductive groups*, International Mathematics Research Notices (2007), electronic.
- (8) (with Maria Sabitova) *The orbit method for profinite groups and a p -adic analogue of Brown’s theorem*, Israel Journal of Mathematics, Vol. 165 (2008), pp. 67–91.

4.2. **Submitted for publication.** The articles are available on the math arXiv.

- *Characters of unipotent groups over finite fields*, Preprint, [arXiv:0712.2614](https://arxiv.org/abs/0712.2614), submitted for publication.
- *Representations of unipotent groups over local fields and Gutkin’s conjecture*, Preprint, [arXiv:1003.2742](https://arxiv.org/abs/1003.2742), submitted for publication.

4.3. **Works in preparation.** Articles to be submitted in the near future:

- (with Vladimir Drinfeld) *Character sheaves on unipotent groups in positive characteristic: foundations*, Preprint, [arXiv:0810.0794](https://arxiv.org/abs/0810.0794)
- *Character sheaves and characters of unipotent groups over finite fields*, in preparation (2010).

4.4. Miscellaneous preprints. Articles not intended for publication:

- *On toric varieties and algebraic semigroups*, arXiv: [math.AG/0004167](#)
- (with Mohammed Abouzaid) *The moduli space of flat G -bundles on a compact hyper-Kähler manifold*, arXiv: [math.DG/0506175](#)
- *Base change maps for unipotent algebra groups*, arXiv: [math.RT/0601133](#)
- (with Vladimir Drinfeld) *A motivated introduction to character sheaves and the orbit method for unipotent groups in positive characteristic*, arXiv: [math.RT/0609769](#)

5. SELECTED SEMINARS AND INVITED LECTURES

- (1) “Representation theory and spectra of operators”, Algebra Seminar, University of Pennsylvania, September 13, 2004.
- (2) “Quantization of minimal resolutions of Kleinian singularities”, Geometry Seminar, University of Texas at Austin, September 15, 2005.
- (3) “Introduction to the orbit method I–IV”, Geometric Langlands Seminar, University of Chicago, October 3, 6, 10 and 13, 2005.
- (4) “Quantization of minimal resolutions of Kleinian singularities”, Lie Groups Seminar, MIT, October 26, 2005.
- (5) “Introduction to spectra and algebraic K-theory”, Geometric Langlands Seminar, University of Chicago, April 27, May 1, 4 and 15, 2005.
- (6) “Character sheaves and the orbit method”, a talk at the conference on “Affine Hecke Algebras, the Langlands Program, Conformal Field Theory, and Matrix Models” at CIRM, Luminy, on June 26, 2006 (invited speaker).
- (7) “Character sheaves for unipotent groups over finite fields”, Algebra Seminar, University of Pennsylvania, September 25, 2006.
- (8) “Character sheaves and the orbit method”, Algebra Seminar, University of Texas at Austin, October 17, 2006.
- (9) “Characters of unipotent groups over finite fields”, Geometric Langlands Seminar, University of Chicago, November 27, 2006.
- (10) “Characters of unipotent groups over finite fields”, Geometry/Physics Seminar, Northwestern University, November 30, 2006.
- (11) “Characters of unipotent groups over finite fields”, (Non)commutative Algebra Seminar, University of Michigan, April 3, 2007.
- (12) “ L -packets for unipotent groups in characteristic p ”, a talk at the conference “Trends in Noncommutative Geometry”, Northwestern University, May 19, 2007 (invited speaker).
- (13) “Characters of unipotent groups over finite fields”, Geometry Seminar, University of Texas at Austin, August 30, 2007.

- (14) “Introduction to modular categories”, Geometric Langlands Seminar, University of Chicago, September 27, October 1, 15 and 18, 2007.
- (15) “Introduction to ∞ -categories”, Geometric Langlands Seminar, University of Chicago, November 5, 8, 12 and 15, 2007.
- (16) “Character sheaves on unipotent groups”, Number Theory and Representation Theory Seminar, University of Michigan, April 7, 2008.
- (17) (Joint with Vladimir Drinfeld) “Character sheaves on unipotent groups in characteristic $p > 0$ ”, a talk at the conference “Current Developments and Directions in the Langlands Program”, Northwestern University, May 14, 2008.
- (18) “Character sheaves on unipotent groups in positive characteristic”, GLNT seminar, University of Michigan, October 6, 8 and 10, 2008.
- (19) “Character sheaves on unipotent groups”, Infinite-Dimensional Algebra Seminar, MIT, February 20, 2009.
- (20) “Character sheaves on unipotent groups: basic techniques”, Noncommutative Algebra Seminar, MIT, February 23, 2009.
- (21) “Geometric methods in representation theory of finite p -groups”, GLNT seminar, University of Michigan, April 6, 2009.
- (22) “Representations of unipotent groups over local fields and Gutkin’s conjecture”, Algebra Seminar, University of Michigan, December 8, 2009.

6. GRANTS AND AWARDS

- (1) 1999–2002 University Scholar, University of Pennsylvania
- (2) 2000–2001 Pincus-Magaziner Undergraduate Research and Travel Grant
- (3) 2000 Undergraduate Research Prize, Department of Mathematics, University of Pennsylvania
- (4) 2000 Rose Undergraduate Research Award
- (5) 2000–2001 Richard Garfield Scholarship, Department of Mathematics, University of Pennsylvania
- (6) 2001 EPADEL (Eastern Pennsylvania and Delaware Section of the MAA) Student Paper Prize
- (7) 2001 Nassau Fund Award (University of Pennsylvania, Center for Undergraduate Research and Fellowships)
- (8) 2002 Undergraduate Research Prize, Department of Mathematics, University of Pennsylvania
- (9) Clay Mathematics Institute Liftoff Fellowship, July 2007
- (10) NSF Postdoctoral Research Fellowship, 2007–2009
- (11) NSF Focused Research Group Award, 2010–2012

7. SERVICE

- Referee for *Advances in Mathematics*, *Selecta Mathematica*, *Transformation Groups*
- Reviewer for MathSciNet
- Organizer of the Representation Theory Seminar at the University of Chicago (2008–2009)
- Organizer of the Kottwitz Seminar for undergraduate and beginning graduate students at the University of Michigan (Winter 2010)