

Curriculum vitae

Personal details

Name: Rostislav Devyatov
Date of birth: April 16, 1988
Place of birth: Moscow, USSR
Citizenship: Russia
E-mail addresses: deviatov@gmail.com (preferable),
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Employment

September 2016–present
University of Ottawa, Faculty of Science, Department of Mathematics and Statistics, Postdoctoral researcher.

Education

October 2011–February 2016
Freie Universität Berlin, Institut für Mathematik, PhD student.
Title of PhD thesis: Equivariant deformations of algebraic varieties with an action of an algebraic torus of complexity 1.
The PhD thesis is available here:
http://www.diss.fu-berlin.de/diss/receive/FUDISS_thesis_000000101121?lang=en
This course of studies included one semester exchange stay in Leiden, The Netherlands (January–July 2014).
The purpose of this exchange stay is to obtain better knowledge of algebraic geometry in positive characteristic.
Scientific advisor at FU Berlin: Klaus Altmann.
Scientific advisor at Leiden University: Lenny Taelman.

September 2011–June 2015
Higher School of Economics, Moscow, Department of Mathematics, PhD student.
Title of PhD thesis: Group actions on compact homogeneous spaces with an open orbit.
The thesis is based on the papers [6] and [8] in the list of publications below.
Scientific advisor at HSE Moscow: Sergey Loktev.

September 2006–August 2011
Moscow State University, Department of Mechanics and Mathematics, Chair (subdepartment) of Higher Algebra, Specialist degree in Mathematics (M. Sc. equivalent).
Scientific advisors at that time: Ivan Arzhantsev, Ernest Vinberg.

September 2006–May 2011
Independent University of Moscow, M. Sc. in Mathematics.

September 2001–June 2006
Moscow State Lyceum N 2

Fields of interest

Algebraic geometry: algebraic groups and their representations, toric varieties and varieties with actions of tori, deformation theory, generically transitive actions, homogeneous spaces and their invariants.
Combinatorics: combinatorics on words, complexity of words, combinatorics of polytopes.

Academic advisor at University of Ottawa: Kirill Zainoulline.

Preprints

- [1] Rostislav Devyatov, *Multiplicity free products of Schubert divisors*, preprint arXiv:1711.02058 [math.AG], submitted 6 Nov 2017, 61 pages.

- [2] Rostislav Devyatov, Martina Lanini, Kirill Zainoulline, *Oriented sheaves on double moment graphs*, preprint arXiv:1710.10275 [math.AG], submitted 27 Oct 2017, 26 pages.
- [3] Rostislav Devyatov, *On subword complexity of morphic sequences*, preprint arXiv:1502.02310 [math.CO], submitted 8 Feb 2015, 61 pages, a very detailed explanation of the results of the extended abstract [12].

PhD Thesis

- [4] Rostislav Devyatov, *Equivariant deformations of algebraic varieties with an action of an algebraic torus of complexity 1*, defended as a PhD thesis to Freie Universität Berlin, 143 pages, available here: http://www.diss.fu-berlin.de/diss/receive/FUDISS_thesis_000000101121?lang=en

Official (refreed, journal) publications

- [5] Sanghoon Baek, Rostislav Devyatov, Kirill Zainoulline, *The K-theory of versal flags and cohomological invariants of degree 3*, Documenta Math. **22** (2017), 1117–1148.
- [6] Rostislav Devyatov, *Unipotent commutative group actions on flag varieties and nilpotent multiplications*, Transformation Groups **20**:1 (2015), 21–64.
- [7] R. A. Devyatov, *Commutative unipotent group actions on flag varieties and nilpotent multiplications* (a short note announcing the results from the previous paper, in Russian), Uspekhi Mat. Nauk **69**:5 (419) (2014), 165–166.
English translation: Russian Mathematical Surveys **69**:5 (2014), 927–929.
- [8] Rostislav Devyatov, *Generically transitive actions on multiple flag varieties*, International Mathematics Research Notices **2014**:11 (2014), 2972–2989.
- [9] *Spherical Varieties*, Notes by R. Devyatov, D. Fratila, V. Tsanov of a course taught by M. Brion, in: Antony Joseph, Anna Melnikov, Ivan Penkov (Eds.), *Highlights in Lie Algebraic Methods*, Progress in Mathematics **295**, Birkhäuser, New York, Dordrecht, Heidelberg, London, 2012, 3–24.
- [10] Rostislav Devyatov, *Neighbourly polytopes with few vertices* (in Russian), Matematicheskii Sbornik **202**:10 (2011), 31–54
English translation: Sbornik: Mathematics **202**:10 (2011), 1441–1462.
- [11] Rostislav Devyatov, *Combinatorial knot invariants that detect trefoils*, Journal of Knot Theory and Its Ramifications **18**:9 (2009), 1193–1203.
- [12] Rostislav Devyatov, *On subword complexity of morphic sequences* (a short paper announcing a part of the results of the preprint [3] above), in: Edward A. Hirsch, Alexander A. Razborov, Alexei Semenov, and Anatol Slissenko (Eds.), *Proceedings of the 3rd international Conference on Computer Science: Theory and Applications (Moscow, Russia, June 07–12, 2008)*, Lecture Notes In Computer Science **5010**, Springer-Verlag, Berlin, Heidelberg, 2008, 146–157.

Prizes and awards

Winner of Simons Foundation Contest for Russian students (organized in collaboration with Moscow Center for Continuous Mathematical Education) in 2011, a winner’s scholarship was awarded.

Finalist of Moebius contest (undergraduate student contest of research papers organized by Moscow Center for Continuous Mathematical Education) in 2009 and 2010

First prizes at International Mathematical Competition for University Students in 2009 (Budapest, Hungary) and 2010 (Blagoevgrad, Bulgaria)

Gold medal at International Mathematical Olympiad in 2006 (Ljubljana, Slovenia)

Conference Talks

1. AMS Sectional Meeting, Special Session on Cohomologies and Combinatorics, New York, USA, May 2017. Talk “On invariant ideals of representation rings of semisimple groups”, see abstract here: http://www.ams.org/amsmtgs/2242_abstracts/1129-14-455.pdf
2. Conference “Young researchers in singularities”, Marseille, France, February 2015. Talk “Varieties with a torus action and their equivariant deformations”, see abstract here, p. 7: http://fconferences.cirm-math.fr/uploads/1/6/6/4/16648158/abstracts_week2.pdf
3. International Conference “Geometry Days in Novosibirsk 2014” dedicated to 85th anniversary of Yuri Grigoryevich Reshetnyak, Novosibirsk, Russia, September 2014. Talk “Equivariant infinitesimal deformations of algebraic threefolds with an action of an algebraic torus of complexity 1”, see abstract here, pp. 94–95: <http://math.nsc.ru/conference/geomtop/2014/abstracts/G-Days-2014.%20Abstracts.pdf>
4. First Caucasian Mathematics Conference (CMC I), Tbilisi, Georgia, September 2014. Talk “Equivariant infinitesimal deformations of algebraic threefolds with an action of an algebraic torus of complexity 1”, see abstract here, pp. 72–73: http://www.gmu.ge/cmc/Files/Book_of_Abstracts_CMC_2014.pdf
5. DIAMANT Symposium (Discrete, Interactive, and Algorithmic Mathematics, Algebra, and Number Theory), Arnhem, The Netherlands, June 2014. Talk “Infinitesimal equivariant deformations of a special class of affine T-varieties”, see abstract here: <http://websites.math.leidenuniv.nl/diamant/index.php?pid=symposium1406programme>
6. Conference “Lie Algebras, Algebraic Groups and Invariant Theory”, Moscow State University, Russia, February 2011. Talk “Generic transitivity for multiple flag varieties”, see abstract here, in Russian, pp. 23–26: http://halgebra.math.msu.su/alg_conf/2011/Thesis_full_2011.pdf
7. International Conference “Geometry, Topology, Algebra and Number Theory, Applications” dedicated to the 120th anniversary of Boris Delone, Moscow, Russia, August 2010. Talk “Examples of neighborly polytopes of dimension D with $D + 4$ vertices”, see abstract here, pp. 35–36: <http://delone120.mi.ras.ru/delone120abstracts.pdf>
8. Summer School “Structures in Lie Representation Theory”, Bremen, Germany, August 2009. Informal talk “Representations of quiver D_4 with an open SL -orbit”. Summer school web page: <http://math.jacobs-university.de/slrt/SummerSchool2009/SummerSchool.html>
9. Third International Computer Science Symposium in Russia, Moscow, June 2008. Talk “On subword complexity of morphic sequences”. A detailed extended abstract was published in the proceedings, see [12] in the publications list above.

Seminar talks on my own research

1. Talk “On invariant ideals of representation rings of semisimple groups” at the Algebra and Topology seminar at State University of New York at Albany, April 2017.
2. Talk “On invariant ideals of representation rings of semisimple groups” at the Combinatorics seminar at Laboratoire de Combinatoire et d’Informatique Mathématique of University of Quebec at Montreal, February 2017.
3. Talk “On invariant ideals of representation rings of semisimple groups” at the Algebra seminar at University of Ottawa, January 2017.
4. Talk “Equivariant deformations of algebraic varieties with an action of an algebraic torus of complexity 1” at Freie Universität Berlin, December 2015.
5. Talk “Group actions on compact homogeneous spaces with an open orbit” at Institute for Information Transmission Problems, June 2015.
6. Talk “Group actions on compact homogeneous spaces with an open orbit” at Iskovskih Seminar at Steklov Mathematical Institute, Moscow, April 2015.

7. Talk “Group actions with an open orbit on compact homogeneous spaces” at the joint seminar “Arithmetic geometry and coding theory” of Poncelet Laboratory at Independent University of Moscow and the department of Algebra and Number Theory of Institute for Information Transmission Problems, Moscow, Independent University of Moscow, December 2014.
8. Talk “Group actions with an open orbit on compact homogeneous spaces” at Mathematics Department of Higher School of Economics, Moscow, December 2014.
9. Talk “Equivariant deformations of algebraic varieties with an action of an algebraic torus of complexity 1” at Mathematics Department of Higher School of Economics, Moscow, June 2014.
10. Talk “Deformations of toric varieties” at the research seminar “Toric geometry, flags, and grassmannians” at Mathematics Department of Higher School of Economics, Moscow, December 2011.
11. Interview talk “Unipotent commutative group actions on flag varieties” at the research seminar “Algebra and Algebraic Geometry” at Freie Universität Berlin, August 2011.
12. Talk “Commutative group actions on flag varieties” (specialist diploma paper defense) at the seminar “Lie Groups and Invariant Theory” at Lomonosov Moscow State University, May 2011.
13. Talk “Generally transitive actions on multiple flag varieties” at the final of Moebius contest (undergraduate student contest of research papers organized by Moscow Center for Continuous Mathematical Education), November 2010.
14. Talk “Local transitivity for multiple flag varieties” (term paper defense) at the seminar “Lie Groups and Invariant Theory” at Lomonosov Moscow State University, May 2010.
15. Talk “Some examples of neighborly polytopes in codimension 4, part 2” at the seminar “Convex polytopes” at Lomonosov Moscow State University, May 2010.
16. Talk “Some examples of neighborly polytopes in codimension 4” at the final of Moebius contest (undergraduate student contest of research papers organized by Moscow Center for Continuous Mathematical Education), November 2009.
17. Talk “Some examples of neighborly polytopes in codimension 4” at the seminar “Convex polytopes” at Lomonosov Moscow State University, April 2009.
18. Talk “Open orbit in the space of representations of quiver \widetilde{D}_4 ” (term paper defence) at the seminar “Lie Groups and Invariant Theory” at Lomonosov Moscow State University, May 2009.
19. Talk “On subword complexity of morphic sequences” at Kolmogorov seminar on computational complexity and descriptive complexity at Lomonosov Moscow State University, February 2008.
20. Talk “On subword complexity of morphic sequences” at the seminar “Algorithmic problems in algebra and logic” at Lomonosov Moscow State University, November 2007.
21. Talk “On new knot invariants defined by colorings” at the seminar “Knots and representation theory” at Lomonosov Moscow State University, October 2007.

Selected Summer Schools and Conferences without a Talk

1. International Conference on Algebraic Geometry, Amsterdam, The Netherlands, July 2013.
2. Summer (actually, autumn) school “Algebraic Geometry: Subgroups of Cremona groups”, Lukecin, Poland, September 2012. School web page:
<http://www.mimuw.edu.pl/~jarekw/EAGER/Lukecin12.html>
3. Summer School “Contemporary mathematics” in Dubna, Russia, July 2006, July 2007, July 2008. Summer school web page (in Russian):
<http://www.mccme.ru/dubna/>

Teaching experience

September 2017–present

Course “Mathematical methods II” for undergraduate students at University of Ottawa. Course code: MAT 1302E. Lectures twice per week. The whole course “Mathematical methods II” (MAT 1302) consists of several sections, coordinated by one coordinator. I am teaching one of the sections (E), and it contains 128 students. Each section is split into two discussion groups, each discussion group has additional classes once per week, taught by a TA. I have to coordinate these TAs.

January 2017–April 2017

Course “Mathematical methods II” for undergraduate students at University of Ottawa. Course code: MAT 1302A, same structure as above, I also taught two lectures per week. This time: 151 students, split into 4 discussion groups with classes once per week, I had to coordinate 4 TAs.

September–December 2016

Course “Mathematical methods II” for undergraduate students at University of Ottawa. Course code: MAT 1302E, same structure as above, I also taught two lectures per week. This time: 114 students, split into 2 discussion groups with classes once per week, I had to coordinate 2 TAs.

July 2015

Minicourse “Combinatorics of polytopes: Gale diagrams” at Summer School “Contemporary mathematics” in Dubna, Russia, approx. 20 students.

September 2011–May 2015

TA for students at HSE Moscow (teaching assistantship is considered as a part of the PhD education program).

September 2008–May 2011

TA for high school students (in mathematics) at Moscow School 25.

April 2008

Minicourse “Fermat Last Theorem for degree 3” for high school students at the Spring School for Moscow Team at Russian Mathematical Olympiad, approx. 15 students.

April 2007

Minicourse “Gaussian integers” for high school students at the Spring School for Moscow Team at Russian Mathematical Olympiad, approx. 15 students.

Languages: Russian (native speaker), English (fluent), German (intermediate), French (basic).