

Ilya Nekrasov

Job

2014 — present **Research assistant at Chebyshev Laboratory, St. Petersburg State University, 14th Line, 29b, Saint Petersburg, 199178 Russia.**

Education

2012 — present **Undergraduate studies at St. Petersburg State University, Department of Mathematics and Mechanics (fifth-year student at the moment). Expected date of diploma: June 2017 .**

Scientific advisors: Prof. Sergei Vostokov (Cohomology of formal modules in local case), Prof. Nikolai Vavilov (Representations of exterior powers of GL_n).

2001 — 2012 **Secondary education at the Educational Facility «Lyceum 1».**

Scientific interests (keywords)

Algebraic groups and its representations, class field theory, formal groups, p -divisible groups, formal and Galois modules, configuration space, hinge mechanisms, polygonal linkage.

Publications

- 2016 **Dusko Jojic, Ilya Nekrasov, Gaiane Panina and Rade Živaljevic *Alexander r -Tuples and Bier Complexes*, Mathematisches Forschungsinstitut Oberwolfach gGmbH Oberwolfach Preprints (OWP).**
- 2016 **I. Nekrasov, G. Panina , A. Zhukova *Cyclopermutohedron: geometry and topology*, European Journal of Mathematics, Volume 2, Issue 3, 2016, pp 835-852.**
- 2016 **S. V. Vostokov, I. I. Nekrasov *Lutz filtration as Galois module*, Lobachevskii Journal of Mathematics 36(2), 2016.**
- 2014 **S. V. Vostokov, I. I. Nekrasov *Lubin–Tate formal module in a cyclic unramified p -extension as Galois module*, Problems in the theory of representations of algebras and groups Part 27, Zap. Nauchn. Sem. POMI, 430, POMI, St. Petersburg, 2014, pp 61–66.**
- 2011 **M. S. Grinkrug, I. I. Nekrasov, *The possibility of constructing a heat engine running on a cycle approaching the Carnot cycle*, International journal of applied and fundamental research. RANH, 12, Moscow, 2011, pp 48-51.**

Conference proceedings and talks

- 2017 ***Grassmannians and others homogeneous varieties in symmetric plethysms* Lie algebras, algebraic groups and Invariant theory, January 31 – February 5, 2017, MSU and Independent University of Moscow, Moscow, Russia.**
- 2015 ***Volume and lattice points counting for the cyclopermutohedron* The 5th German-Russian Week of the Young Researcher at the Moscow Institute of Physics and Technology in Dolgoprudnyj, September 6-12, 2015, MIPT, Moscow, Russia.**

- 2015 *Volume and lattice points counting for the cyclopermutohedron* Polynomial Computer Algebra '2015 , April 13-18, 2015, Euler International Mathematical Institute, St. Petersburg, Russia.
- 2015 *Lutz filtration as Galois module (poster)* Local arithmetic geometry in honor of Sergei V. Vostokov on the occasion of his 70th birthday, May 18-22, 2015, Euler International Mathematical Institute, St. Petersburg, Russia.

Projects

- 2017 *Formal groups and arithmetic cohomology theories* Russian Science Foundation, 16–11–10200.
- 2016-2017 *Geometry and topology* Russian Science Foundation, 16–11–10039.
- 2016 *Formal modules and ramification theory* RFBR, 14–01–00393.
- 2015-2016 *Mechanical linkages — theory and applications* RFBR, 15–01–02021.
- 2015-2016 Russian Science Foundation, grant 16-11-10039.

Visits

- 2016, May Mathematisches Forschungsinstitut Oberwolfach gGmbH, Germany. *Research in Pairs* (Dusko Jojic, Ilia Nekrasov, Gaiane Panina, Rade T. Zivaljevic).
- 2015, April Bielefeld University, Bielefeld, Germany. Research advisor: Anthony Bak.

Conferences and schools

- 2013 Summer School “Contemporary Mathematics”, Dubna , Russia.

Extracurricular scientific and educational activities

- 2015 Won grants: Rokhlin Stipends for Young Mathematicians, Second prize for undergraduates students.
- 2013 – 2014 & 2014 – 2015 academic years Won grants: competition of Chebyshev Laboratory and JSC «Gazprom Neft».

September 2012 — present time **On a regular basis attend courses and make a lectures at the seminars provided by St. Petersburg Department of V. A. Steklov Institute of Mathematics of the Russian Academy of Sciences and Chebyshev Laboratory at St. Petersburg State University, including,**

Courses:

- Algebraic groups (semi-annual course, lecturer: Nikolai Gordeev)
- Lie algebras of Cartan type (semi-annual course, lecturer: Nikolai Vavilov)
- Clifford algebras and Spinor groups (semi-annual course, lecturer: Nikolai Vavilov)
- Exceptional objects in algebra and geometry (semi-annual course, lecturer: Nikolai Vavilov)
- Jacobian conjecture (semi-annual course, lecturers: Nikolai Vavilov and Alexander Perepechko)
- Theta function, modular forms and combinatorial identities (semi-annual course, lecturer: Maksim Vsemirnov)
- Toric varieties (semi-annual course, lecturer: Gaiane Panina)
- Combinatorics of polyhedra (semi-annual course, lecturer: Gaiane Panina)
- Combinatorial geometry (one-year course, lecturer: Gaiane Panina)
- Topological K-theory (semi-annual course, lecturer: Semen Podkorytov)
- Filtration theory and its application to the dynamics and combinatorics (semi-annual course, lecturer: Anatolii Vershik)
- Riemannian geometry (semi-annual seminar, lecturer: Nikolai Kosovskii)
- Combinatorial species and representation theory of S_n (semi-annual course, lecturer: Konstantin Pimenov)

Seminars:

- Local class field theory and formal modules (three-year seminar, advisor: Sergey Vostokov)
- Class field theory: Arithmetic and Geometric cases (two-year seminar, advisor: Sergey Vostokov)
- Pure Motives (one-year seminar, advisor: Michail Bondarko)
- Voevodskii theory of Mixed Motives (one-term seminar, advisor: Michail Bondarko)
- Quadratic forms and Motives (one-term seminar, advisor: Michail Bondarko)
- Finite simple groups (three-term seminar, advisor: Nikolai Vavilov)
- Algebraic groups (four-year seminar, advisor: Nikolai Vavilov)
- Schemes and commutative algebra (semi-annual seminar, advisor: Igor' Zhukov)
- Crystallographic groups and orbifolds (semi-annual seminar, advisor: Konstantin Pimenov)
- Morse theory (one-year seminar, advisor: Gaiane Panina)
- C^* -algebras (semi-annual seminar, advisor: Grigorii Amosov) .

Application 1

My current progress in learning general academic disciplines at the University

Current GPA = 4.923

Applied Cybernetics – 5 (Excellent)

Algebra and Number Theory – 5 (Excellent)

Combinatorics – 4 (Good)

Differential Equations – 5 (Excellent)

Discrete Mathematics – 5 (Excellent)

Extremal Problems in Mathematics – 5 (Excellent)

Functional Analysis – 5 (Excellent)

Geometry and Topology – 5 (Excellent)

Calculus 1, 2, 3 and 4 – 5 (Excellent)

Mathematical Logic and Set Theory – 5 (Excellent)

Mathematical Physics – 5 (Excellent)

Mathematical Statistics and Probability – 5 (Excellent)

Quantum Mechanics – 5 (Excellent) .