

CURRICULUM VITAE

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Citizenship: Russian

Languages: Russian (native), English (good)

Research interests: Representation Theory, Invariant Theory, Lie Groups and Lie Algebras.

EDUCATION

March 28 2012: Ph. D. in Mathematics, St. Petersburg State University, Russia

Ph. D. Thesis: *Representations and Invariants of the Unitriangular Group*

Supervisor: prof. Aleksandr Panov; reports by Nikolai Vavilov and Ivan Arzhantsev.

November 2007–October 2010: graduate student at Samara State University.

June 2006: Samara State University's Honours Diploma.

Diploma's title: *Orbital varieties*; specialities: Mathematics.

Supervisor: prof. Panov Aleksandr Nikolaevich

2001–2006: student at Samara State University

1998–2001: Samara Gymnasium №1

PRINCIPAL RESULTS

- The field of invariants of the adjoint action of the unitriangular group in the nilradical of any parabolic subalgebra is described. We construct algebraically independent polynomial generators of the field of invariants.
- The algebra of invariants of the adjoint action of the unitriangular group in the nilradical of a parabolic subalgebra is studied for parabolic subalgebras in the cases, when the reductive subalgebra of a parabolic subalgebra is formed by diagonal blocks with sizes $(2, k, 2)$, $k > 2$, and with sizes $(1, 2, 2, 1)$. In these cases, we indicate generators of the algebra of invariants and its relations.
- We provide the sufficient conditions, when the algebra of invariants of the adjoint action of the unitriangular group in the nilradical of a parabolic subalgebra is a non-free algebra.
- We prove that the algebra of invariants of the adjoint action of the unitriangular group in the nilradical of a parabolic subalgebra is finitely generated in the case, when the reductive subalgebra of a parabolic subalgebra is formed by diagonal blocks with monotonically increase (or decrease) sizes.

- We describe orbits of the adjoint action of the unitriangular group $UT(n, \mathbb{C})$ on the Lie algebra corresponding to $UT(n, \mathbb{C})$ and orbital varieties in $UT(n, \mathbb{C})$ for $n < 7$.

GRANTS AND PRIZES

- Russian Foundation of Fundamental Research (RFBR) 12-01-00070a, «Lie groups and Geometry of varieties» (2012–2014), supervisor: A.N.Panov.
- Russian Foundation of Fundamental Research (RFBR) 08-01-00151-a, «Lie groups, Lie algebras and Geometry of varieties» (2008–2010), supervisor: V.E.Voskresenskii.
- The research program «Representations of Groups and Invariant Theory» (2008–2011), Samara State University, supervisor: A.N.Panov.
- Undergraduate Student Research Awards by prof. V.M. Klimkin, held at Samara State University (2005–2006).

SCIENTIFIC ACTIVITIES

Conference talks

- *The algebra of invariants of one representation of the unitriangular group*, Third School-Conference «Lie Algebras, Algebraic groups and Invariant Theory», Tol'yatti, 2012.
- *The algebra of invariants and the field of invariants of the adjoint action of the unitriangular group in the nilradical of a parabolic subalgebra*, Second School-Conference «Lie Algebras, Algebraic Groups and Invariant Theory», Moscow, 2011.
- *The field of invariants of the adjoint representation of the unitriangular group*, Summer School-Conference «Lie Algebras, Algebraic Groups and Invariant Theory», Samara, 2009.
- *Regular N -orbits in the nilradical of a parabolic subalgebra*, International Algebraic Conference (dedicated to the 100th anniversary of A. G. Kurosh), Moscow, 2008.
- *Adjoint orbits of the unitriangular group*, International Algebraic Conference (dedicated to the 100th anniversary of D. K. Faddeev), St. Petersburg, 2007.
- *Nilpotent orbits of the triangular group*, International Conference on Algebra and Number Theory (dedicated to the 80th anniversary of V. E. Voskresenskii), Samara, 2007.

Talks in seminars

- Several talks (2006–2012) in the Algebraic Seminar, Chair of Algebra and Geometry, Samara State University, Russia.
- 2 talks (2008, 2011) in the St. Petersburg Algebraic Seminar dedicated to D. K. Faddeev, St. Petersburg Chair of Mathematical Institute of Russian Academy of Sciences, Russia.
- 2 talks (2006, 2011) in the seminar «Algebraic Groups», Chair of Higher Algebra and Number Theory, St. Petersburg State University, Russia.

Other participations in conferences and schools

- Oberwolfach Seminar: Algebraic Groups and Patching, Oberwolfach, 2012.
- International Conference (dedicated to the 65th anniversary of A. G. Khovanskii), Moscow, 2012.
- School on Algebraic Geometry, Yaroslavl, Russia, 2008.
- International Conference «Transformation Groups» (dedicated to the 70th anniversary of E.B. Vinberg), Moscow, Russia, 2007.