CURRICULUM VITAE

Alexandr Nikolaevich Zubkov

Personal Data:

Date of birth: November 8, 1958.
Place and country of birth: Omsk region, Russia.
Nationality: Russian.
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Current Position:
Senior Research Fellow, Sobolev Institute of Mathematics, Omsk Branch, SORAN (main place of work);
Full Professor, Department of Mathematics, Omsk State Technical University (part-time employment).

Degrees:
1997 Doctor of Science (Habilitation) in Mathematics (Algebra and Mathematical Logic), Institute of Mathematics of Siberian Division of Russian Academy of Sciences, Novosibirsk, Russia.
Title of dissertation: Invariants and identities of representations of algebraic and profinite groups.
1989 Ph.D. in Mathematics (Algebra and Mathematical Logic), Institute of Mathematics of Belorussia Academy of Sciences, Minsk, Belorussia.
Title of dissertation: Varieties of profinite groups and Lie algebras with bounded low central series.

Education:

1976-1981, M.Sc. in Mathematics (with Honor), Omsk State University, Omsk, Russia.
Title of diploma work: Representations of free pro-p-groups by 2×2- matrices over profinite rings.

Research Activities:

Invariant Theory, Profinite Group Theory, Algebraic Group Theory, Quantum Groups and Superalgebra Theory.

Fellowships and Honors :

Russian Fund for Fundamental Research Awards, 1992-present,
Bolyai Research Fellowship and OTKA T23434 (Hungary) 1999, 2000,
DAAD (Germany), 2000,
FAPESP (Brazil), 2001-2002, 2007-2008, 2009-2010, 2012, 2014-2015
Schapiro fund, Penn State University (USA), 2003,
INdAM, Università di Bari and COFIN MIUR (Italy), 2006, 2008,
SFB (Germany), 2006,
QNRF, Doha University (Qatar), 2013-2016 (three year research project),
Russian National Fund, 2016-2019 (three years research project).

Positions:
2016-present, Senior Research Fellow, Sobolev Institute of Mathematics, Omsk Branch, SORAN.
2014-2016, Full Professor, Department of Mathematics, Omsk State Technical University, Omsk, Russia.
1997-2014, Full Professor, Department of Mathematics, Omsk State Pedagogical University, Omsk, Russia.
1992-1997, Docent, Department of Mathematics, Omsk State Pedagogical University, Omsk, Russia.
1996-1997, Docent, Department of Economics, Omsk State University, Omsk, Russia.
1994-2008, Senior Research Fellow, Omsk Branch of Institute of Mathematics of Siberian Division of Russian Academy of Science.
1982-1992, Assistant Professor, Omsk State Pedagogical University, Omsk, Russia.

Invited Adresses:

International Conference "Algebraic Groups and Representations", Cortona, Italy, 1995.
International algebraic conference dedicated to the memory of professor L.M.Gluskin (1922-1985), Slovyans'k, Donets'k region, Ukraine, 1997.
ICRA, Bielefeld, Germany , 1998.
International Conference on Algebra (Novosibirsk 1989, Barnaul 1991, Krasnoayrsk 1993, Moscow 1998, Novosibirsk 2003).
All-Union Algebraic Conferences, 1983-1989.
International Conference '"Algebra Representation Theory", NATO ASI, Constanta, Romania, 2000.
International Conference "Lie and Jordan algebras, their Representations and Ap-

plications", Guaruja, Brasil, 2002.
Workshop "Groups, Rings, Algebras and Applications", Ubatuba, Sao Paulo, Brazil, 2010.
International conference "Representation Theory and its Applications", Uppsala, Sweden, 2004.
International Conference in Honor of Donald S.Passman "Groups, Rings and Algebras" , University of Wisconsin-Madison, USA, 2005.
International algebraic conference, Ekaterinburg, 2005,
International algebraic conference, Krasnoayrsk 2007,
Workshop on "Cluster algebras and cluster tilted algebras", Bielefeld, 2006.
8-th Internetional algebraic conference in Ukraine, 2011 (dedicated to the memory of professor V.M. Usenko), Lugansk.
International conference on Ring Theory, 2011 (dedicated to the 90-th anniversary of A.I.Shirshov), Novosibirsk.
The Second School-Conference on "Lie algebras, algebraic groups and invariant theory", Moscow, 2011.
International conference "Lie and Jordan Algebras, their Representations and Applications V", 2012, Bele'm, PA, Brazil.
International Conference "Groups, Rings and Group Rings 2012", 2012, Brasil, Ubatuba.
The 17-th International Conference on Representations of Algebras, Syracuse University, Syracuse, New York, 15-19 August 2016.
The sixth School-Conference on "Lie algebra, algebraic groups and invariant theory". Moscow, Russia, January 30 - February 4, 2017.
International conference "Mal'tsev meeting", Novosibirsk, Russia, November 20-24, 2017.
Transformation Groups 2017, Conference dedicated to Prof.Ernest B.Vinberg on the occasion of his 80-th birthday, Moscow, Russia, December 14-18, 2017.

Two-month research visits, Renyi Institute of Mathematics, Hungarian Academy of Sciences (1999, 2000),
two-month research visit, Bielefeld University, Germany (2000),
one-year research visit, Sao Paulo University, Brazil (2001-2002),
three-month research visit, Penn State University, USA (2003),
one-month research visit, Penn State University, USA (2005),
one-month research visit, Bari University, Italy (2006),
two-month research visit, Bielefeld University, Germany (2006),
six-month research visit, Sao Paulo University, Brazil (2007-2008),
two-month research visit, Bari University, Italy (2008),
ten-month research visit, Sao Paulo University, Brazil (2009-2010),
two month visit a lecturer, Northeastern University, Boston, USA (2012),
four month research visit, Sao Paulo University, Brazil (2012),
two month research visit, Qatar State University (Doha, Qatar) (2014),
one-year research visit, Sao Paulo University, Brazil (2014-2015),

three month research visit, Qatar State University (Doha, Qatar) (2015),
two month research visit, Qatar State University (Doha, Qatar) (2016),
half-month research visit, UAE University, Al Ain (2017),
one-month research visit, UAE University, Al Ain(2019).

Articles published in refereed journals. Unless otherwise indicated, all authors participated equally in all stages of research.

1) Zubkov, A.N. Nonrepresentability of a free nonabelian pro-p-group by second-order matrices. (Russian) Sibirsk. Mat. Zh. 28 (1987), no. 5, 64-69.

2) Zubkov, A.N. Nizhnii tsentral'nyi ryad pro-p-gruppy obshchikh matrits vtorogo poryadka. (Russian) [The lower central series of a pro-p-group of second-order general matrices] Preprint [Preprint], 731. Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk, 1987. 12 pp.

3) Zubkov, A.N. The lattice of subvarieties of pro-p-groups has the power of the continuum. (Russian) Sibirsk. Mat. Zh. 29 (1988), no. 3, 194-197, 223; translation in Siberian Math. J. 29 (1988), no. 3, 491-494 (1989).

4) Zubkov, A.N. Algebra Li s ogranichennymi v sovokupnosti rangami faktorov nizhnego tsentral'nogo ryada. (Russian) [A Lie algebra with rank restrictions on the set of quotients of the lower central series] Preprint [Preprint], 769. Akad. Nauk SSSR Sibirsk. Otdel., Vychisl. Tsentr, Novosibirsk, 1988. 18 pp.

5) Zubkov, A. N. Varieties of pro-p-groups of second-order matrices. (Russian) Algebra i Logika 29 (1990), no. 4, 430-451, 504; translation in Algebra and Logic 29 (1990), no. 4, 287-301 (1991).

6) Zubkov, A. N.; Remeslennikov, V. N. Equations in a group with a length function. (Russian) Ukrain. Mat. Zh. 43 (1991), no. 7-8, 935-942; translation in Ukrainian Math. J. 43 (1991), no. 7-8, 872-878 (1992).

7) Zubkov, A. N. Varieties of metabelian pro-p-groups. (Russian) Sibirsk. Mat. Zh. 33 (1992), no. 5, 80-90, 222; translation in Siberian Math. J. 33 (1992), no. 5, 816-825 (1993).

8) Zubkov, A. N. Matrix invariants over an infinite field of finite characteristic. (Russian) Sibirsk. Mat. Zh. 34 (1993), no. 6, 68-74, ii, viii; translation in Siberian Math. J. 34 (1993), no. 6, 1059-1065.

9) Zubkov, A. N. On the procedure of calculation of the invariants of an adjoint action of classical groups. Comm. Algebra 22 (1994), no. 11, 4457-4474.

10) Zubkov, A. N. Endomorphisms of tensor products of exterior powers and Procesi hypothesis. Comm. Algebra 22 (1994), no. 15, 6385-6399.

11) Zubkov, A. N. On a generalization of the Razmyslov-Procesi theorem. (Russian) Algebra i Logika 35 (1996), no. 4, 433-457, 498; translation in Algebra and Logic 35 (1996), no. 4, 241-254.

12) Zubkov, A. N.; Shtern, A. S. On a conjecture of O. I. Tavgen'. (Russian) Sibirsk. Mat. Zh. 38 (1997), no. 1, 93-99, ii; translation in Siberian Math. J. 38 (1997), no. 1, 78-83.

13) Zubkov, A. N. On a matrix representation of a free group. (Russian) Mat. Zametki 64 (1998), no. 6, 863-870; translation in Math. Notes 64 (1998), no. 5-6,

745-752 (1999).

14) Zubkov, A. N. Invariants of an adjoint action of classical groups. (Russian) Algebra Log. 38 (1999), no. 5, 549-584, 639; translation in Algebra and Logic 38 (1999), no. 5, 299-318.

15) Domokos, M.; Zubkov, A. N. Semi-invariants of quivers as determinants. Transform. Groups 6 (2001), no. 1, 9-24.

16) Zubkov, A. N. Modules with good filtration and invariant theory. AlgebraRepresentation theory (Constanta, 2000), 439-460, NATO Sci. Ser. II Math. Phys. Chem., 28, Kluwer Acad. Publ., Dordrecht, 2001.

17) Zubkov, A. N. The Razmyslov-Procesi theorem for quiver representations. (Russian) Fundam. Prikl. Mat. 7 (2001), no. 2, 387-421.

18) Domokos, M.; Zubkov, A. N. Semisimple representations of quivers in characteristic p. Algebr. Represent. Theory 5 (2002), no. 3, 305-317.

19) Domokos, M.; Kuzmin, S. G.; Zubkov, A. N. Rings of matrix invariants in positive characteristic. J. Pure Appl. Algebra 176 (2002), no. 1, 61-80.

20) Kuz'min, S. G.; Zubkov, A. N. Rings of invariants of 2×2 matrices in positive characteristic. Special issue on linear algebra methods in representation theory. Linear Algebra Appl. 365 (2003), 271-278.

21) Zubkov, A. N. Invariants of mixed representations of quivers. I. J. Algebra Appl. 4 (2005), no. 3, 245-285.

22) Zubkov, A. N. Invariants of mixed representations of quivers. II. Defining relations and applications. J. Algebra Appl. 4 (2005), no. 3, 287-312.

23) Zubkov, A. N. Borel subalgebras of Schur superalgebras. (Russian) Algebra Logika 44 (2005), no. 3, 305-334, 383-384; translation in Algebra Logic 44 (2005), no. 3, 168-184.

24) Grishkov, Alexandr N.; Marko, Frantisek; Zubkov, Alexandr N. Exactness of complexes of modules over Schur superalgebras. Algebra Colloq. 13 (2006), no. 1, 99-110.

25) Marko, Frantisek; Zubkov, Alexandr N. Schur superalgebras in characteristic p. Algebr. Represent. Theory 9 (2006), no. 1, 1-12.

26) Marko, Frantisek; Zubkov, Alexandr N. Schur superalgebras in characteristic p. II. Bull. London Math. Soc. 38 (2006), no. 1, 99-112.

27) Zubkov, A. N. Some properties of general linear supergroups and of Schur superalgebras. (Russian) Algebra Logika 45 (2006), no. 3, 257-299, 375; translation in Algebra Logic 45 (2006), no. 3, 147-171.

28) Lopatin, A. A.; Zubkov, A. N. Semi-invariants of mixed representations of quivers. Transform. Groups 12 (2007), no. 2, 341-369.

29) Scala, Roberto La; Zubkov, Alexander, Costandard modules over Schur superalgebras in characteristic p. J. Algebra Appl. 7 (2008), no. 2, 147-166.

30) Zubkov, A. N. Affine quotients of supergroups. Transform. Groups 14 (2009), no. 3, 713-745.

31) Antonov, V. V.; Zubkov, A. N. Coinvariants of a coadjoint action of quantum matrices. (Russian) Algebra Logika 48 (2009), no. 4, 425-442, 543, 545; translation

in Algebra Logic 48 (2009), no. 4, 239-249.

32) La Scala, Roberto; Zubkov, Alexander, General linear supergroups and Schur superalgebras. Lecture Notes of Seminario Interdisciplinare di Matematica. Volume VIII, 131-140, Lect. Notes Semin. Interdiscip. Mat., 8, Semin. Interdiscip. Mat. (S.I.M.), Potenza, 2009.

33) Grishkov, A. N.; Marko, F.; Zubkov, A. N. Description of costandard modules for Schur superalgebra $S(2|1)$ in positive characteristic. Linear Multilinear Algebra 59 (2011), no. 1, 57-64.

34) Marko, Frantisek; Zubkov, Alexandr N. A note on bideterminants for Schur superalgebras. J. Pure Appl. Algebra 215 (2011), no. 9, 2223-2230.

35) Zubkov, A. N. On quotients of affine superschemes over finite supergroups. J. Algebra Appl. 10 (2011), no. 3, 391-408.

36) Masuoka, Akira; Zubkov, Alexandr N. Quotient sheaves of algebraic supergroups are superschemes. J. Algebra 348 (2011), 135-170.

37) Grishkov, A. N.; Marko, F.; Zubkov, A. N. Generators of supersymmetric polynomials in positive characteristic. J. Algebra 349 (2012), 38-49.

38) Scala, Roberto La; Zubkov, Alexander, Donkin-Koppinen filtration for general linear supergroup. Algebr. Represent. Theory 15 (2012), no. 5, 883-889.

39) Frantisek Marko and Alexandr N. Zubkov, Pseudocompact Algebras and Highest Weight Categories. Algebr. Represent. Theory. 16(2013), 689-728.

40) A.N.Zubkov and P.A.Ulyashev, Solvable and unipotent supergroups, Algebra and Logic, 53(2014), no.3, 206–216.

41) Zubkov A.N., $GL(m|n)$-supermodules with good and Weyl filtrations, Journal of Pure and Applied Algebra, 219(2015), 5259–5279.

42) A. N. Grishkov and A. N. Zubkov, Solvable, reductive and quasireductive supergroups, Journal of Algebra, 452 (2016), 448–473.

43) Zubkov A.N., Some homological properties of $GL(m|n)$ in arbitrary characteristic. J. Algebra Appl. 15, No. 7, Article ID 1650119, 26 p. (2016).

44) Zubkov, Alexandr N.; Marko, Frantisek, The center of $Dist(GL(m|n))$ in positive characteristic. Algebr. Represent. Theory 19, No. 3, 613-639 (2016).

45) Akira Masuoka, Alexandr N. Zubkov, Solvability and nilpotency for algebraic supergroups, Journal of Pure and Applied Algebra, 221(2017), 339–365.

46) Frantisek Marko, Alexandr N. Zubkov, Martin Juras, Public-key cryptosystem based on invariants of diagonalizable groups, Groups Complexity Cryptology, Vol. 9, 1(2017).

47) Frantisek Marko, Alexandr N. Zubkov, Minimal degrees of invariants of (super)groups – a connection to cryptology, Linear and Multilinear Algebra, 65(2017), no.11, 2340-2355.

48) Frantisek Marko, Alexandr N. Zubkov, Linkage principle for ortho-symplectic supergroups, Journal of Algebra, 493(2018), 444-482.

49) F.Marko, A.N.Zubkov, Blocks for the general linear supergroup $GL(m|n)$, Transformation Groups, 23(2018), no.1, 185–215.

50) A.N.Zubkov, I.P.Shestakov, Invariants of G_2 and $Spin(7)$ in positive characteristic, Transformation Groups, 23(2018), no.2, 555-588.

51) A.N.Zubkov, Some properties of Noetherian superschemes, Algebra and Logic, Vol.57, 2018, No 2, 130-140.

Articles published in non-refereed journals :

1) Zubkov A.N. Lifting of invariants of classical groups, Community of Omsk University, N2, 1996, 11-13.

2) Zubkov A.N. Mixed representations of quivers and relative problems, Bielefeld, 2000, SFB 343, Preprint N00-094.

3) Introduction to the game theory I: matrix games, Omsk, Omsk State Pedagogical University, 2000.

4) Introduction to the game theory II: cooperative games, Omsk, Omsk State Pedagogical University, 2001.

5) Marko Frantisek, Zubkov A.N. When is a Schur superalgebra cellular? Trabalhos do Departamento de Matematica 2002-34, IME, Sao Paulo University (2002)

Papers presented at professional meetings :

1) Zubkov A.N. (presenter and author), On a matrix representation of a free group, 17 All-Union Conference, abstracts of talks, Part 2, Minsk (1983).

2) Zubkov A.N. (presenter and author), The lattice of subvarieties of pro-p-groups has the power of the continuum, 18 All-Union Conference, abstracts of talks, Part 1, Kishinev (1985).

3) Zubkov A.N. (presenter and author), Varieties of pro-p-groups of second-order matrices, 11 All-union Symposium on Group Theory, Sverdlovsk (1989).

4) Zubkov A.N. (presenter and author), Varieties of metabelian pro-p-groups, Second International Conference on Algebra, abstracts of talks, Barnaul (1991).

5) Zubkov A.N. (presenter and author), Invariants of an adjoint action of classical groups, Third International Conference on Algebra, abstracts of talks, Krasnoayrsk (1993).

6) Zubkov A.N. (presenter and author), The explicit calculation of the invariants of an adjoint action of classical groups, International algebraic conference dedicated to the memory of professor L.M.Gluskin (1922-1985), Slovyans'k, Donets'k region, Ukraine, 1997, 82-83.

7) Zubkov A.N. (presenter and author), Rational invariants of an adjoint action of orthogonal and symplectic groups, Third Siberian Congress of Industrial and Applied Mathematics, INPRIM-98, abstracts of talks, part 5, Novosibirsk, 1998.

8) Zubkov A.N. (presenter and author), Invariants of an adjoint action of classical groups, ICRA, abstracts of talks, Bielefeld, 1998.

9) Zubkov A.N. (presenter and author), The Razmyslov-Procesi theorem for representations of quivers, Kurosh Algebraic Conference, abstracts of talks, Moscow, 1998, 176-177.

10) Zubkov A.N. (presenter, in cooperation with M.Domokos), Semisimple representations of quivers in characteristic p , Fourth International Conference on Algebra, abstracts of talks, Novosibirsk, 2000.

11) Zubkov A.N. (presenter, in cooperation with S.G.Kuzmin), Cohen-Macaulay property of rings of matrix invariants, Fourth International Conference on Algebra, abstracts of talks, Novosibirsk, 2000.

12) Zubkov A.N. (presenter and author), Defining relations of invariants of mixed representations of quivers, International Conference "Lie and Jordan algebras, their Representations and Applications", Guaruja, Brasil, 2002.

13) Zubkov A.N. (presenter, in cooperation with A.A.Lopatin), Semi-invariants of mixed representations of quivers, International Conference "Representation Theory and its Applications", (in cooperation with A.A.Lopatin), Uppsala, Sweden, 2004.

14) Zubkov A.N. (presenter, in cooperation with F.Marko), The representation theory of Schur superalgebras in characteristic p, International Conference "Representation Theory and its Applications", Uppsala, Sweden, 2004.

15) Zubkov A.N. (presenter, in cooperation with F.Marko), Schur superalgebras in characteristic p, International Conference in Honor of Donald S.Passman "Groups, Rings and Algebras", University of Wisconsin-Madison, USA, 2005.

16) Zubkov A.N. (presenter and author), On the homological properties of general linear supergroups and Schur superalgebras, International algebraic conference, Ekaterinburg, 2005, 102-103.

17) Zubkov A.N. (presenter, in collaboration with A.Masuoka), Quotients of algebraic supergroups are superschemes, The second school-conference on "Lie algebras, algebraic groups and invariant theory", Moscow, 2011, 29-31.

18) Zubkov A.N. (presenter, in collaboration with F.Marko), Pseudocompact algebras and highest weight categories, International conference on ring theory dedicated to the 90th anniversary of Anatolii Illarionovich Shirshov, Novosibirsk, 2011, 54-57.

19) Zubkov A.N. (presenter and author), Properties of algebraic supergroups that are defined by their even subgroups. International conference "Lie and Jordan algebras, their representations and applications V", Belem, Para, Brazil, 2012.

20) Zubkov A.N. (presenter and author), Borel-Bott-Weyl theorem for general linear supergroups in characteristic p. International conference "Groups, rings and group rings 2012". Ubatuba, Sao Paulo, Brazil, 2012.

21) Zubkov A.N. (presenter, in collaboration with I.P. Shestakov), Vector invariants of G_2 and $Spin_7$ in positive characteristic. The 17-th International Conference on Representations of Algebras, Syracuse University, Syracuse, New York, 15-19 August 2016.

22) Zubkov A.N., Vector invariants of some exceptional simple groups in positive characteristic, The sixth School-Conference on "Lie algebra, algebraic groups and invariant theory". Moscow, Russia, January 30 - February 4, 2017.

23) Zubko A.N. (presenter, in collaboration with A.Masuoka), Method of Harish-Chandra pairs in the theory of algebraic group superschemes. The international conference "Mal'tsev meeting", Novosibirsk, Russia, November 20-24, 2017.

Manuscripts submitted for publication in referred journals.

1) V.Bovdi and A.N.Zubkov, Semi-invariants of super-representations of quivers, submitted to Commun. in Algebra.

2) A.N.Zubkov, Exterior powers of the standard E_6-module, submitted to Siberian Electronic Mathematical Reports.

3) A.Masuoka and A.N.Zubkov, On the notion of Krull super-dimension, submitted to Journal of Pure and Applied Algebra.

Manuscripts in progress.

1) A.Masuoka and A.N.Zubkov, Algebraic group superschemes.

Participating in committees for defending PhD theses as a referee

1) Evgueni Tchibrikov, Novosibirsk State University, PhD theses, supervisor Prof. Dr. L.A. Bokut, 2004.

2) Pavel Kolesnikov, Novosibirsk State University, docotor of science (habilitation) thesis, consultant Prof. Dr. L.A. Bokut, 2008.

3) Leonid Samoilov, Moscow State University, docotor of science (habilitation) thesis, consultant Prof. Dr. A.G.Kemer, 2010.

4) Vladimir Shigolev, St.Pitersburg State University, docotor of science (habilitation) thesis, 2013.

5) Dylene Souza Barros, IME, Sao Paulo University, undergraduate thesis, supervisor Prof. Dr. Alexandr Grichkov, 2010.

6) Cristina Spohr, IME, Sao Paulo University, PhD thesis, supervisor Prof. Dr. Alexandr Grichkov, 2010.

7) Marcio Alexandre de O. Reis, IME, Sao Paulo University, PhD thesis, supervisor Prof. Dr. Alexandr Grichkov, 2010.

PhD students

1) Sergei Kuzmin. PhD thesis has been defended in Omsk State University at 02/12/2003.

2) Artem Lopatin. PhD thesis has been defended in Omsk State University at 09/09/2004.

3) Artem Lopatin, Novosibirsk State University, doctor of science (habilitation) thesis, consultant Prof. A.N.Zubkov, 15/11/2013.