

Vladimir Vasil'evich Sergeichuk

Curriculum Vitae

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Personal data:

Date of birth: August 17, 1949
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Education

- 1993 **Habilitation in Mathematics** (Doctor of Science), Kiev State University
Thesis: *Classification Problems of Linear Algebra*
- 1975 **Ph.D. in Mathematics** (Candidate of Science), Kiev State University
Advisor: Andrei Vladimirovich Roiter
Thesis: *Applications of the Theory of Matrix Problems to the Group Theory*
- 1971 **M.Sc. in Mathematics**, Kiev State University

Employment

- Feb. 1994–present **Leading Researcher**, Institute of Mathematics, Kiev
- Sept. 1991–Jan.1994 **Senior Researcher**, Institute of Mathematics, Kiev
- Sept. 1979–Aug. 1991 **Associated Professor**, Kiev State University
- Sept. 1974–Aug. 1979 **Assistant Professor**, Kiev State University

Activities

- **Associate Editor** of *Linear Algebra and its Applications*.
- **Special Editor** of the issue of *Linear Algebra and its Applications* 430 (2009) in honor of Thomas J. Laffey.
- **Scientific Secretary** of the PhD/DrSc Dissertation Committee in the Institute of Mathematics, Kiev.
- **Member of the Organizing Committee** of I, II, III, IV, V, and VII International Algebraic Conferences in Ukraine.
- **Member of the Program Committee** of [III](#), [IV](#), and [V](#) International Symposia "Computer Aspects of Numerical Algorithms", Wisla (2008, 2010) and Szczecin (2011), Poland.
- **State Prize of Ukraine** in the field of science and engineering (2007).

International Grants

- 2010–2011 **FAPESP** (Sao Paulo, Brazil), processo 2010/07278-6
2010 **Grant of the International Mathematical Union** to attend the International Congress of Mathematicians, India, 2010
2006–2007 **FAPESP** (Sao Paulo, Brazil), processo 05/59407-6
2003 Fellow from Ben-Gurion University (Israel)
2000–2003 **NSF grant** DMS 0070503 (P.I.: Roger Horn)
1996–1999 **Cooperative Research Grant** UMI-314 from US Civilian Research and Development Foundation for Independent States of FSU
1995 **Travel Grant** from Soros International Science Foundation, USA, to attend the *5th ILAS Conference*, Atlanta, Georgia, USA
1994–1995 **Long-Term Research Grant** U6E000 from Soros International Science Foundation, USA
1992 **Emergency Grant** from Soros International Science Foundation, USA

Selected Conferences

- June 2011 **Matrix Methods in Mathematics and Applications**, Moscow, Russia
August, 2010 **International Congress of Mathematicians**, Hyderabad, India
May 2009 **Matrix Theory Conference**, Haifa, Israel
July 2007 **Matrix Methods and Operator Equations**, Moscow, Russia
April 2007 **Matrix Theory Conference**, Haifa, Israel
July–Aug. 2006 **XIX Brazilian Algebra School**, Diamantina, Brazil
June 2005 **Matrix Methods and Operator Equations**, Moscow, Russia
June 2002 **10th ILAS** (=International Linear Algebra Society) **Conference**, Auburn, Alabama, USA
June 2001 **9th ILAS Conference**, Haifa, Israel
July 1999 **8th ILAS Conference**, Barcelona, Spain
September 1998 **Representation Theory of Algebras**, Bielefeld, Germany
August 1996 **6th ILAS Conference**, Chemnitz, Germany
Sept.- Oct. 1995 **Representation Theory of Groups, Algebras and Orders**, Constanta, Romania
August 1995 **5th ILAS Conference**, Atlanta, Georgia, USA

Scientific Visits

March–May 2012	IHÉS, France
Sept.2010–March 2011	Sao Paulo University, Brazil
May 2009	Ben-Gurion University, Beer-Sheva, Israel
April 2007	Ben-Gurion University, Beer-Sheva, Israel
Feb.2006–Feb.2007	Sao Paulo University, Brazil
Nov.–Dec.2003	Ben-Gurion University, Beer-Sheva, Israel
March–June 2003	University of Utah, Salt Lake City, USA
March–June 2002	University of Utah, Salt Lake City, USA
June 2001	Ben-Gurion University, Beer-Sheva, Israel
Oct. 2000–Jan. 2001	University of Utah, Salt Lake City, USA
Nov–Dec. 1999, Dec. 1998	University of Bielefeld, Bielefeld, Germany
Aug 1993, Oct.1992, May 1991	Zurich University, Zurich, Switzerland

Publications

1. **Remarks on the classification of a pair of commuting semilinear operators** (with D. Duarte de Oliveira, R.A. Horn, and T. Klimchuk), *Linear Algebra Appl.* (2011), doi:10.1016/j.laa.2011.11.029.
2. **Miniversal deformations of matrices of bilinear forms** (with A.R. Dmytryshyn and V. Futorny), *Linear Algebra Appl.* (2011) doi:10.1016/j.laa.2011.11.010.
3. **Simultaneous unitary equivalences** (with T.G. Gerasimova and R.A. Horn), *Linear Algebra Appl.* (2011), doi:10.1016/j.laa.2011.09.031.
4. **A criterion for unitary similarity of upper triangular matrices in general position** (with D. Farenick, V. Futorny, T.G. Gerasimova, and N. Shvai), *Linear Algebra Appl.* 435 (2011) 1356-1369.
5. **A canonical form for nonderogatory matrices under unitary similarity** (with V. Futorny and R.A. Horn), *Linear Algebra Appl.* 435 (2011) 830–841.
6. **Block triangular miniversal deformations of matrices and matrix pencils** (with L. Klimenko), in: V. Olshevsky, E. Tyrtshnikov (Eds), *Matrix Methods: Theory, Algorithms and Applications*, World Scientific Publishing Co. Pte. Ltd., Hackensack, NJ, 2010, pp. 69-84.
7. **Matrices that are self-congruent only via matrices of determinant one** (with T.G. Gerasimova and R.A. Horn), *Linear Algebra Appl.* 431 (2009) 1620-1632.
8. **Canonical forms for unitary congruence and *congruence** (with R.A. Horn), *Linear Multilinear Algebra* 57 (2009) 777-815.
9. **Problems of classifying associative or Lie algebras over a field of characteristic not two and finite metabelian groups are wild** (with G. Belitskii, A.R. Dmytryshyn, R. Lipyanski, and A. Tsurkov) *Electr. J. Linear Algebra* 18 (2009) 516-529.
10. **Preface [Special issue in honor of Thomas J. Laffey]** (with R. Gow, R. Loewy, J.F. Queiró), *Linear Algebra Appl.* 430 (2009) 1725-1729.

11. **Pairs of mutually annihilating operators** (with V.M. Bondarenko and T.G. Gerasimova), *Linear Algebra Appl.* 430 (2009) 86-105.
12. **Normal form of m -by- n -by-2 matrices for equivalence** (with G. Belitskii and M. Bershadsky), *J. Algebra* 319 (2008) 2259-2270.
13. **Tridiagonal canonical matrices of bilinear or sesquilinear forms and of pairs of symmetric, skew-symmetric, or Hermitian forms** (with V. Futorny and R.A. Horn), *J. Algebra* 319 (2008) 2351-2371.
14. **Canonical matrices of isometric operators on indefinite inner product spaces**, *Linear Algebra Appl.* 428 (2008) 154-192.
15. **Canonical matrices of bilinear and sesquilinear forms** (with R.A. Horn), *Linear Algebra Appl.* 428 (2008) 193-223.
16. **Classification of squared normal operators on unitary and Euclidean spaces** (with V. Futorny and R.A. Horn), *Fundam. Prikl. Mat.* (in Russian) 13 (no. 4) (2007) 225-232. English translation: *J. Math. Sci.* (N.Y.) 155 (2008) 950-955.
17. **Linearization method in classification problems of linear algebra**, *Sao Paulo J. Math. Sci.* 1 (2007) 219-240.
18. **Classification of sesquilinear forms with the first argument on a subspace or a factor space** (with V. Futorny), *Linear Algebra Appl.* 424 (2007) 282-303.
19. **Positivity criteria generalizing the leading principal minors criterion** (with V. Futorny and N. Zharko), *Positivity* 11 (no. 1) (2007) 191-199.
20. **A regularization algorithm for matrices of bilinear and sesquilinear forms** (with R.A. Horn), *Linear Algebra Appl.* 412 (2006) 380-395.
21. **Rigid systems of second-order linear differential equations** (with M.I. Garcia-Planas, M.D. Magret, and N.A. Zharko), *Linear Algebra Appl.* 414 (2006) 517-532.
22. **Canonical forms for complex matrix congruence and $*$ -congruence** (with R.A. Horn), *Linear Algebra Appl.* 416 (2006) 1010-1032.
23. **Congruence of multilinear forms** (with G. Belitskii), *Linear Algebra Appl.* 418 (2006) 751-762.
24. **Canonical Matrices and Related Questions**, Proceedings of Institute of Mathematics of NAS of Ukraine. Mathematics and its Applications, V. 57, Kiev, 2006, 326 p.
25. **Miniversal deformations of chains of linear mappings** (with T.N. Gaiduk and N.A. Zharko), *Algebra Discrete Math.* (no.1) (2005) 47-61.
26. **The problems of classifying pairs of forms and local algebras with zero cube radical are wild** (with G. Belitskii, V.M. Bondarenko, R. Lipyanski, and V.V. Plachotnik), *Linear Algebra Appl.* 402 (2005) 135-142.
27. **Solution of linear matrix equations in a $*$ -congruence class** (with R.A. Horn and N. Shaked-Monderer), *Electr. J. Linear Algebra* 13 (2005) 153-156.
28. **Problems of classifying associative or Lie algebras and triples of symmetric or skew-symmetric matrices are wild** (with G. Belitskii and R. Lipyanski), *Linear Algebra Appl.* 407 (2005) 249-262.
29. **Computation of canonical matrices for chains and cycles of linear mappings**, *Linear Algebra Appl.* 376 (2004) 235-263.

30. **Generic canonical form of pairs of matrices with zeros** (with T. Gaiduk), *Linear Algebra Appl.* 380 (2004) 241-251.
31. **Congruences of a square matrix and its transpose** (with R.A. Horn), *Linear Algebra Appl.* 389 (2004) 347-353.
32. **Complexity of matrix problems** (with G. Belitskii), *Linear Algebra Appl.* 361 (2003) 203-222.
33. **Estimate of the number of one-parameter families of modules over a tame algebra** (with T. Bruestle), *Linear Algebra Appl.* 365 (2003) 115-133.
34. **Generic families of matrix pencils and their bifurcation diagrams** (with M.I. Garcia-Planas), *Linear Algebra Appl.* 332/334 (2001) 165-179.
35. **Canonical matrices for linear matrix problems**, *Linear Algebra Appl.* 317 (2000) 53-102.
36. **Simplest miniversal deformations of matrices, matrix pencils, and contragredient matrix pencils** (with M.I. Garcia-Planas), *Linear Algebra Appl.* 302/303 (1999) 45-61.
37. **Littlewood's algorithm and quaternion matrices** (with D.I. Merino), *Linear Algebra Appl.* 298 (1999) 193-208.
38. **Unitary and Euclidean representations of a quiver**, *Linear Algebra Appl.* 278 (1998) 37-62.
39. **On subgroups that can be lifted modulo a central commutant**, *Ukrainian Math. J.* 50 (no. 5) (1998) 842-845.
40. **Elementary and multi-elementary representations of vectroids** (with K.I. Belousov, L.A. Nazarova, and A.V. Roiter), *Ukrainian Math. J.* 47 (no. 11) (1995) 1661-1687.
41. **Existence of a multiplicative basis for a finitely spaced module over an aggregate** (with A.V. Roiter), *Ukrainian Math. J.* 46 (no. 5) (1994) 604-617.
42. **Classification of pairs of linear operators in a four-dimensional vector space** (with D.V. Galinskii). (Russian) *Infinite groups and related algebraic structures*, Akad. Nauk Ukrainy, Inst. Mat., Kiev, 1993, 413-430.
43. **Tame and wild subspace problems** (with P. Gabriel, L.A. Nazarova, A.V. Roiter, and D. Vossieck), *Ukrainian Math. J.* 45 (no. 3) (1993) 335-372.
44. **Classification of sesquilinear forms, pairs of Hermitian forms, and selfadjoint and isometric operators over the field of quaternions**, *Math. Notes* 49 (no. 3-4) (1991) 409-414.
45. **A remark on the classification of holomorphic matrices up to similarity**, *Funct. Anal. Appl.* 25 (no. 2) (1991) 135.
46. **Symmetric representations of algebras with involution**, *Math. Notes* 50 (no. 3-4) (1991) 1058-1061.
47. **Classification of pairs of subspaces in spaces with scalar product**, *Ukrainian Math. J.* 42 (no. 4) (1990) 487-491.
48. **Pseudolinear matrix pencils and systems of linear differential equations with meromorphic coefficients**, *Differential Equations* 25 (no. 10) (1989) 1201-1206.
49. **Classification problems for systems of forms and linear mappings**, *Math. USSR-Izv.* 31 (no. 3) (1988) 481-501.

50. **Holomorphic equivalence of a system of linear differential equations with meromorphic coefficients to a system with linear fractional coefficients.** (Russian) *Differentsialnye Uravneniya* 24 (no. 6) (1988) 1064-1066.
51. **Metric representations of a quiver** (with H.M. Havid). (Russian) *Dokl. Akad. Nauk Ukrain. SSR Ser. A* (no. 12) (1988) 19-21.
52. **Two semiclassifying theorems for metabelian groups** (with H.M. Hawidi), *Delta J. Sci.* 12 (no. 1) (1988) 31-43.
53. **The canonical form of the matrix of a bilinear form over an algebraically closed field of characteristic 2**, *Math. Notes* 41 (no. 5-6) (1987) 441-445.
54. **Classification problems for systems of linear mappings and sesquilinear forms.** (Russian) Preprint, Kiev University, 1983, 60 p. = Manuscript No. 196 Uk-D84, deposited at the Ukrainian NIINTI, 1984; *R. Zh. Mat.* 1984, 7A331.
55. **Classification of linear operators in a finite-dimensional unitary space**, *Functional Anal. Appl.* 18 (no. 3) (1984) 224-230.
56. **Representation of dischemes.** (Russian) *Linear algebra and the theory of representations*, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1983, 110-134.
57. **Representations of simple involutive quivers.** (Russian) *Representations and quadratic forms*, Akad. Nauk Ukrain. SSR, Inst. Mat., Kiev, 1979, 127-148.
58. **Finitely generated groups with commutator group of prime order.** *Ukrainian Math. J.* 30 (no. 6) (1978) 592-598.
59. **The classification of metabelian p -groups.** (Russian) *Matrix problems*, Akad. Nauk Ukrain. SSR Inst. Mat., Kiev, 1977, 150-161.
60. **Application of modules over a dyad for the classification of finite p -groups possessing an abelian subgroup of index p and of pairs of mutually annihilating operators** (with L.A. Nazarova, A.V. Roiter, and V.M. Bondarenko), *J. Soviet Math.* 3 (no. 5) (1975) 636-654.