

CURRICULUM VITAE

SURNAME: Kalashnikov

FIRST NAME(S): Vyacheslav

Date and place of birth: November 6, 1955; Vladivostok, USSR.

Nationality: Russian

Marital status: Married, 2 children

Affiliations and official addresses:

Since 2002 – Present:

Assistant Professor
Department of Systems and Industrial Engineering (IIS)
ITESM (Tecnológico de Monterrey)
Campus Monterrey
Av. Eugenio Garza Sada 2501 Sur
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On leave from the:

Department of Experimental Economics
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Department of Applied Mathematics
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Previous affiliations and official addresses:

Since 2000 till 2002:

PISIS (Postgraduate Program in Systems Engineering)
Facultad de Ingeniería Mecánica y Eléctrica (F.I.M.E)
Universidad Autónoma de Nuevo León (U.A.N.L.)
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Since 1985 till 1989:

Department of Mathematical Economics
Institute for Mathematics
Siberian Division of the USSR Academy of Sciences
Universitetsky prospekt 4
Novosibirsk 630090
Russia

Since 1981 till 1985:

Department of Technical Cybernetics and Applied Mathematics
Altai State University (ASU)
Lenin prospekt 61
Barnaul 656099
Russia

EDUCATION:

**CENTRAL ECONOMICS AND MATHEMATICS INSTITUTE (CEMI)
OF THE RUSSIAN ACADEMY OF SCIENCES —**

Moscow, Russia

Dr. Sci. of Mathematics in Mathematical Cybernetics, December 1995 (Habilitation Degree)

**MATHEMATICAL INSTITUTE OF THE SIBERIAN DIVISION OF THE
RUSSIAN ACADEMY OF SCIENCES —**

Novosibirsk, Russia

PhD in Mathematical Cybernetics, September 1981

NOVOSIBIRSK STATE UNIVERSITY –

Novosibirsk, Russia

Master in Mathematics, June 1977

University teaching experience:

My teaching experience has been in the following areas:

1. Operations Research
2. Optimization (linear, non-linear and vector optimization)
3. Numerical methods for optimization problems
4. Numerical methods for applied mathematics (integral equations and differential equations)
5. Differential equations
6. Convex analysis

7. Min-max and variational inequalities
8. Functional analysis
9. Non-linear analysis
10. Variational Calculus and Optimal Control
11. Econometrica
12. Mathematical Programming
13. Mathematical Statistics and Applications
14. Probability Theory
15. Matrix Algebra and Optimization
16. Linear Models in Statistics
17. Linear Algebra and Applications
18. Decision Making
19. Advanced Optimization Techniques
20. Games Theory
21. Advanced Mathematics for Humanitarian Sciences

Research Experience:

My research expertise is in the following areas:

- (i) Operations Research
- (ii) Optimization, Variational Inequalities
- (iii) Numerical Analysis, Linear Algebra
- (iv) Equilibria in Oligopolistic Models, Complementarity Problems
- (v) Bilevel Optimization Problems

IV. Visiting Professorship

Since 1993, I have visited the following Universities:

1. Royal Military College of St-Jean, St-Jean, Quebec, Canada, November 14-29, 1993 (3 lectures on Complementarity Theory);
2. Royal Military College of St-Jean, St-Jean, Quebec, Canada, June 29 - July 6, 1994 (2 lectures on Complementarity Theory);
3. Technical University of Linköping, Linköping, Sweden, March 15-30, 1995 (3 lectures on Variational Inequalities);
4. Technical University of Linköping, Linköping, Sweden, November 19-24, 1995 (1 lecture on Complementarity Problems);
5. Royal Military College of Canada, Kingston, Ontario, Canada, September 22-October 06, 1997 (3 lectures on Complementarity Theory). At the same time, in the end of this visit, I was invited by Prof. P. Marcotte to the Université de Montréal to deliver a lecture "A Network Model of Single Product Market", October 03, 1997;
6. University of Kaiserslautern, Germany, December 06-19, 1998.
7. Together with Profs. George Isac (Canada) and Anna Nagurny (USA), I was invited in the framework of the Program 'Research in Pairs' at the Mathematical Center Oberwolfach, May 30 - June 26, 1999. We conducted this research together with Dr. George Isac (Dr. Anna Nagurny did not participate by person).
8. As a one of the winners of a competition for a travel grant, I was delivered one to take part and present a talk at the 12th World Congress in Economics, Buenos Aires, Argentina, August 23-27, 1999;

9. I visited the Tilburg University, The Netherlands, to conduct joint research with Prof. A. Talman, during one month, October 01 -- 30, 1999. During this time, I was also invited for one day October 12 to the Technical University Delft where delivered a lecture "Existence of Solutions to Complementarity Problems with Pseudomonotone Operators";
10. I visited the Royal Military College, Kingston, Ont., Canada, to fulfil joint research with Prof. G. Isaac on February 01-08, 2000.
11. Since July 01, 2000, until June 30, 2002, I was a Visiting Professor at the University of Nuevo León, San Nicolás de los Garza, Mexico.
12. Since June 15 until July 15, 2002, I was supported by the DAAD Scholarship (Germany) to conduct joint research with Prof. Dr. Stephan Dempe, Freiberg Mining University, Freiberg, Germany.
13. Financially supported by the CONACyT, Mexico, I spent two weeks since March 20 till April 01, 2004, at the Freiberg Mining University, Freiberg, Germany, conducting joint research with Prof. Dr. Stephan Dempe.
14. Financially supported by the ITESM and the Applied Mathematics Institute (AMI) of the China People Republic Academy of Sciences, Beijing, I visited this Institute (AMI) in July-August of 2004, delivering three lectures for professors and PhD students.
15. Financially supported by the ITESM and the University of Calabria, Italy, I was invited to present a talk at the 2nd International Workshop on Functional Analysis Methods in Economics and Finances (FAMinEF'2005), Cetraro (Cosenza, Italy), July 07-09, 2005.
16. Financially supported by the ITESM and the Technological University of Beijing, I visited this University in Beijing in July of 2006, delivering two lectures for professors and PhD students.
17. Financially supported by the Norwegian Science and Technology University (NTNU) in Trondheim, Norway, I visited this University in December 2007, delivering two lectures for professors and PhD students.
18. Financially supported by the ITESM and the Technological University of Beijing, I visited this University in Beijing in June of 2008, delivering one lecture for professors and PhD students.
19. Financially supported by the ITESM and the Dalian Technological University, I visited this University in Dalian, China, in June of 2008, delivering two lectures for professors and PhD students.
20. Financially supported by the ITESM and the Harbin Commerce University, I visited this University in Harbin, China, in July of 2008, delivering two lectures for professors and PhD students.
21. Financially supported by the ITESM and CONACyT, I visited the Technological University Freiberg (Bergakademie TU-Freiberg) in Freiberg, Germany, in January – February 2009, realizing joint research activity with the host professor Dr. Stephan Dempe.

V. Publications:

- Number of papers in refereed journals, books, and working papers total: **114**, including:

1. **Some Problems of Lexicographic Minimization** (in Russian), *Optimizatsia*, 1978, Vol. 21(38), Novosibirsk, Institute of Mathematics, Siberian Division of USSR Acad. Sci., p. 109 – 120.
2. **Separate Step Method for Minimization of Ill-Conditioned Functions** (in Russian), *Optimizatsia*, 1980, Vol. 25(42), p. 70 – 85.
3. **Method for Minimization of Ill-Conditioned Functions by Selecting Singular Directions**, (in Russian), *Optimizatsia*, 1982, Vol. 30(47), p. 35 – 49.
4. **Optimization Problems with Hierarchical System of Parameters** (*Ph.D. Thesis in*

- Russian*), Novosibirsk University, Novosibirsk, USSR, 1981, 154 pp.
5. **Global Convergence of Inexact Newton Method Solving Complementarity Problems** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1988, Vol. 42(59), p. 66 – 85
 6. **Step Accuracy Control for a Newton-Like Method Solving Nonlinear Complementarity Problems** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1988, Vol. 43(60), p. 27 – 40.
 7. **Optimal Control of Inner Accuracy in Bi-Level Iterative Processes** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1988, Vol. 44(61), p. 27 – 55.
 8. **An Existence Theorem for Nonlinear Complementarity Problems** (in Russian), *Optimizatsia*, 1989, Vol. 45(62), p. 26--33.
 9. **Step Accuracy Control for a Loaded Functional Method** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1989, Vol. 45(62), p. 34 – 53.
 10. **Decomposition Method Solving Block Complementarity Problem** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1989, Vol. 46(63), p. 35 – 50.
 11. **Convergence of Newton Method Solving Nonlinear Complementarity Problem** (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1991, Vol. 49(65), p. 69 – 79.
 12. **A Numerical Method Solving the Problem of Ideal Fluid around Arbitrarily Positioned Bodies** (in Russian, with S.D. Kostornoi), *Journal of Computational Mathematics and Mathematical Physics*, Moscow, 1992, Vol. 32, No. 6.
 13. **A Numerical Method for Solving the Problem of Ideal Fluid Flow around Arbitrarily Positioned Bodies** (with S.D. Kostornoi), *Computational Mathematics and Mathematical Physics*, 1992, Vol. 32, No. 6, pp. 837--844. (Printed in Great Britain, 1993, Pergamon Press Ltd.)
 14. **An Iteration Method Solving Nonlinear Complementarity Problems**, (in Russian, with N.I. Kalashnikova), *Optimizatsia*, 1993, Vol. 52(69), p. 42 – 54.
 15. **Solving Bi-Level Variational Inequality Problems** (in Russian, with N.I. Kalashnikova), *Cybernetics and System Analysis*, (Institute of Cybernetics, Kiev), 1994, Vol. 30, No. 4, p. 178 – 180.
 16. **Parameter Driving Method to Study Equilibrium** (in Russian, with V.A. Bulavsky), *Economics and Mathematical Methods* (Central Economics and Mathematics Institute, Moscow), 1994, Vol. 30, No. 4, p. 129 – 138.
 17. **Application of Topological Degree Theory to Complementarity Problem**, *Proceedings of the Siberian Conference on Industrial and Applied Mathematics (in memoriam of L. Kantorovich)*, Novosibirsk, Russia, July 24-31, 1994, Vol. 1, p. 316 – 324.
 18. **Equilibrium in Generalized Cournot and Stackelberg Models**, *Ibid*, p. 253--261.
 19. **Equilibria in Generalized Cournot and Stackelberg Models** (in Russian, with V. A. Bulavsky), *Economics and Mathematical Methods* (Central Economics and Mathematics Institute, Moscow), 1995, Vol. 31, No. 3, p. 164 – 176.
 20. **Fixed Point Existence Theorems Based Upon the Topological Degree of a Continuous Mapping**, Working Paper (*in Russian*), Central Economics & Mathematics Institute, 1995. -- 29 pp.
 21. **Problem of Ideal Liquid Flowing Around Arbitrarily Positioned Bodies: Numerical Solution and Application to Hydraulic Machines**, (with Kostornoi S.D.), *Proc. 3rd International Conference on Mathematical and Numerical Aspects of Wave Propagation* (Mandelieu-La Napoule, France, 1995), SIAM, 1995, p. 372 – 383.
 22. **Complementarity Problems and Generalized Oligopoly Models** (Habilitation Thesis in Russian), Central Economics and Mathematics Institute, Moscow, 1995, 243 pp.
 25. **Solving Two-Level Variational Inequality** (with N.I. Kalashnikova), *Journal of Global Optimization* (special issue on Bilevel Programming), 1996, Vol. 8, No. 3, p. 289 – 294.

26. **A Network Model of Market Equilibrium**, Working Paper #WP/96/004. -- Moscow, CEMI, Russian Academy of Sciences, 1996.-- 25 p. (in Russian, with V.A. Bulavsky).
27. **Exceptional Families, Topological Degree and Complementarity Problems** (with G. Isac and V.A. Bulavsky), *Journal of Global Optimization*, 1997, Vol. 10, No. 2, p. 207--225.
28. **Application of Topological Degree Theory to Complementarity Problems** (with V.A. Bulavsky and G. Isac). -- In: A. Migdalas et al. (Eds.), '*Multilevel Optimization: Theory and Algorithms*', Kluwer Academic Publishers, Dordrecht, The Netherlands, 1998, p. 333 – 358.
29. **Network Model of a Single Product Market** (with V.A. Bulavsky). -- In: P. Kischka, H.-W. Lorenz, U. Derigs, W. Domschke, P. Kleinschmidt, R. Moehring (Eds.), '*Operations Research Proceedings 1997 (Selected Papers of the Symposium on Operations Research (SOR'97), Jena, September 3--5, 1997)*', Springer-Verlag Berlin-Heidelberg, 1998, p. 228 – 234.
30. **A Newton-Like Approach to Solving an Equilibrium Problem** (with V. Bulavsky), *Annals of Operations Research*, 1998, Vol.81, p. 115 – 128.
31. **An Alternative Model of Spatial Competition** (with V. Bulavsky).- In: Martine Labbé, Gilbert Laporte, Katalin Tanczos, Philippe Toint (Eds.), '*Operations Research and Decision Aid Methodologies in Traffic and Transportation Management*', NATO ASI Series, Series F: Computer and Systems Science, Vol. 166, Springer-Verlag Berlin Hedelberg 1998, p. 302--318.
32. **A Newton-Like Approach to Solving an Equilibrium Problem** (with V. Bulavsky). – In: F. Giannessi et al. (Eds.), '*High Performance Algorithms and Software in Nonlinear Optimization*' (Ischia, 1997), Kluwer Academic Publishers, Dordrecht, 1998, p. 69 – 85.
33. **Application of Topological Degree Theory to Semi-Definite Complementarity Problem** (with V. Bulavsky and G. Isac). - In: P. Kall, H.-J. Luethi (Eds.), '*Operations Research Proceedings 1998*' (Selected Papers of the International Conference on Operations Research, Zurich, August 31 - September 3, 1998), Springer-Verlag Berlin-Heidelberg, 1999, p. 53 – 62.
34. **Equilibrium in Generalized Cournot and Stackelberg Models** (with V.A. Bulavsky). Discussion Paper # 99116, Center of Economic Research (CentER), Tilburg University, Tilburg, The Netherlands, 1999, ISSN 0924-7815. – 25 p.
35. **Fuzzy Equilibrium in Generalized Cournot and Stackelberg Models** (with V.A. Bulavsky). – In: Rudolf Felix (Ed.), *Proceedings of the 4th European Workshop on Fuzzy Decision Making, Optimization, and Analysis (EFDAN'99)*, Dortmund, 1999, June 14-15, p. 25 – 50.
38. **A Regularization Approach for Variational Inequalities with Pseudo-Monotone Operators** (with A.A. Khan). – In: K. Inderfurth et al. (Eds.), *Operations Research Proceedings 1999*, Selected papers of the Symposium on Operations Research (SOR'99), Magdeburg, September 1--3, 1999, Springer-Verlag Berlin-Heidelberg, 2000, p. 19 – 22.
39. **Exceptional Family of Elements, Leray-Schauder Alternative, Pseudomonotone Operators and Complementarity** (with G. Isac). - *Journal of Optimization Theory and Applications*, 2001, Vol. 109, No. 1, p. 69 – 83.
40. **Existence of Solutions to Implicit Complementarity Problems.** – In: D.M. Morera et al. (Eds.), *Proceedings of the 4th Italian-Latin American Conference on Applied and Industrial Mathematics (IV ITLA)*, La Habana, Cuba, March 19-23, 2001, p. 335 – 342.
41. **Solution to Complementarity Problem Monotone with Respect to Parameters.** –In: D.M. Morera et al. (Eds.), *Proceedings of the 4th Italian-Latin American Conference on Applied and Industrial Mathematics (IV ITLA)*, La Habana, Cuba, March 19-23, 2001, p. 343 – 348.

42. **A Penalty-Function Approach to a Mixed-Integer Bilevel Programming Problem** (with R.Z. Ríos-Mercado). – In: C. Zozaya et al. (Eds.), *Proceedings of the 3rd International Meeting on Computer Science (ENC'01)*, Aguascalientes, Mexico, September 16-19, 2001. – Vol. II, p. 1045 – 1054.
43. **Application of Topological Degree Theory to Semi-Definite Complementarity Problem**, (with V. Bulavsky and G. Isac).- *Optimization*, 2001, Vol. 49, No. 5-6, p. 405 – 423.
44. **Complementarity, Equilibrium, Efficiency, and Economics** (with G. Isac and V.A. Bulavsky), Kluwer Academic Publishers, Dordrecht, 2002. – 468 p.
45. **Solvability of the Implicit Complementarity Problems** (with G. Isac), *Annals of Operations Research*, 2002, Vol. 116, p. 199 – 221.
46. **Discrete Bilevel Programming: Application to a Gas Shipper's Problem** (with S. Dempe), Working Paper 2002-02, TU Bergakademie Freiberg, Freiberg, Germany, 2002, ISSN 1433-9307.- 25 P.
47. **La Optimización Binivel: Estudio de un Caso en la Industria de Gas Natural** (with R.Z. Ríos-Mercado, in Spanish), *Ingenierías*, 2003, Vol. 6, No. 20, p. 47 – 52.
48. **Application of Discrete Bilevel Programming to Some Applied Problems** (with S. Dempe and H. Terashima). – In: Chávez et al. (Eds.), *Proceedings of the Fourth Mexican International Conference on Computer Science (ENC'2003)*, Tlaxcala, México, September 8-12, 2003, IEEE Computer Society, Los Alamitos, CA/Washington/Brussels/Tokyo, 2003, p. 254 – 262.
49. **Interior Equilibrium in a Network of Oligopolistic Markets** (with N.I. Kalashnikova). – In: R. Clute (ed.), *Proceedings of the International Business and Economics Research Conference (IBERC'2003)*, Las Vegas, NV, U.S.A., October 06-10, 2003. – 13 p.
50. **Solving a Natural Gas Cash-Out Bilevel Program by a Penalty Function Method** (with R. Ríos-Mercado), Reporte Técnico 2002-03, PISIS, FIME, UANL, San Nicolás de los Garza, N.L., México, Abril 2003, 18 pp.
<http://yalma.fime.uanl.mx/~pisis/ftp/pubs/reports/pisis-2002-03.pdf>
51. **A Mixed-Discrete Bilevel Programming Problem** (with S. Dempe), Academic Report 2003-08, TU Bergakademie Freiberg, 2003, 8 pp., . <http://www.mathe.tu-freiberg.de/%7Edempe/Artikel/mixed.pdf>
52. **Discrete Bilevel Programming: Application to a Natural Gas Cash-Out Problem** (with S. Dempe and R. Ríos-Mercado), Academic Report 2003-10, TU Bergakademie Freiberg, 2003, ISSN 1433-9307, 24 p.
53. **A Mixed-Discrete Bilevel Programming Problem** (with S. Dempe). – In: D. Ahr, R. Fahrion, M. Oswald, G. Reinelt (editors): *Operations Research Proceedings 2003*, Selected Papers of the International Conference on Operations Research, Heidelberg, September 3-5, 2003. Springer-Verlag, Berlin, 2004, p. 284 – 291.
54. **Solución Numérica del Problema de Flujo de Líquido Ideal: Aplicación a Máquinas Hidráulicas** (with S.D. Kostornoi, in Spanish), *Sinergi@ Productiv@*, 2004, Vol. 2, No. 3, p. 16 – 22.
55. **Discrete Bilevel Programming: Application to a Natural Gas Cash-Out Problem** (with S. Dempe and R. Ríos-Mercado), *The European Journal of Operational Research*, 2005, Vol. 166, No. 2, p. 469 – 488.
56. **Numerical Experiments in a Human Migration Model** (with N.I. Kalashnykova and Claudia Cambero). – In: F. J. Cantú Ortiz et al. (eds.), *Proceedings of the 36th Congress of Investigation and Extension of the System of ITESM (CIE'2006)*, Monterrey, Mexico, January 18-20, 2006, Vol. 1, p. 332 – 341.
57. **Stackelberg Model Dealing with Social Surplus** (with Eduardo Cordero). – In: F. J. Cantú Ortiz e.a. (eds.), *Proceedings of the 36th Congress of Investigation and Extension of*

- the System of ITESM (CIE'2006)*, Monterrey, Mexico, January 18-20, 2006, Vol. 1, p. 342 – 351.
58. **A Natural Gas Cash-Out Problem: A Bilevel Programming Framework and a Penalty Function Method** (with R.Z. Ríos-Mercado). – *Optimization and Engineering*, 2006, Vol. 7, p. 403 – 420.
 59. **Optimality Conditions for Bilevel Programming Problems** (with S. Dempe and N.I. Kalashnykova). – In: S. Dempe and V.V. Kalashnikov (eds.), *Optimization with Multivalued Mappings: Theory, Applications and Algorithms*, Springer-Verlag, 2006, p. 3 – 28.
 60. **First and Second Order Optimality Conditions in Set Optimization** (with B. Jadamba and A.A. Khan). – In: S. Dempe and V.V. Kalashnikov (eds.), *Optimization with Multivalued Mappings: Theory, Applications and Algorithms*, Springer-Verlag, 2006, p. 265 – 276.
 61. *Optimization with Multivalued Mappings: Theory, Applications and Algorithms, Optimization and Its Applications*, S. Dempe and V.V. Kalashnikov (eds.), Springer-Verlag, 2006. – 276 pp., ISBN 0-387-34220-6.
 62. **Solution of Implicit Complementarity Problem with a Perturbation Algorithm** (with Nataliya Kalashnykova). – In: H. Fetter et al. (Eds.), *Proceedings of the Seventh International Conference on Fixed Point Theory and its Applications*, Guanajuato, Mexico, July 17-23, 2005, Yokohama Publishers Inc., Yokohama, Japan, 2006, p. 125 – 136.
 63. **Simulation of a Conjectural Variations Equilibrium in a Human Migration Model** (with Nataliya Kalashnykova), *The International Journal of Simulation: Systems, Science & Technology*, The United Kingdom Simulation Society, Nottingham, United Kingdom, 2006, Vol. 7, No. 9, p. 26 – 48.
 64. **Numerical Experimentation with a Human Migration Model** (with Nataliya Kalashnykova, Ramón Luévanos, César Uranga, Mario Méndez, Arnulfo Luévanos). – *The European Journal of Operational Research*, 2008, vol. 189, p. 208 – 229.
 65. **Un Modelo de Migración Humana: Experimentos Numéricos Basados Sobre los Datos de las Tres Ciudades Laguneras** (with Nataliya Kalashnykova, Ramón Luévanos, César Uranga, Mario Méndez, Arnulfo Luévanos). – *Estudios Demográficos y Urbanos*, Mexico, 2007, vol. 22, No. 3, pp. 731 – 760.
 66. **Multi-Valued Implicit Complementarity Problems: Perturbation Algorithm** (with Nataliya Kalashnykova and Aarón Arévalo Franco). – In: Jeng-Shyang Pan et al. (eds.), *Proceedings of the 2nd International Conference on Innovative Computing, Information and Control*, Kumamoto, Japan, September 5 – 7, 2007. ISSN 0-7695-2882-1/07
 67. **Stackelberg Equilibrium in a Mixed Duopoly** (with Vitaly Kalashnikov and Eduardo Cordero). – Ibid.
 68. **Exceptional Families of Elements and Solvability of Implicit Complementarity Problems** (with Gerardo Pérez and Nataliya Kalashnykova). – In: Junzo Watada (Ed.), *Proceedings of the 5th International Symposium on Management Engineering (ISME'2008)*, Kitakyushu, Japan, March 15 – 17, 2008. - pp. 119 – 126, ISSN 1882-8736.
 69. **Binomial Calculus: Advantages and Prospects** (with Alexei Borisenko and Nataliya Kalashnykova). – *ICIC Express Letters*, Japan, ISSN 1881-803X, 2008, Vol. 2, No. 2, pp. 123 – 130.
 70. **A Penalty Function Approach to Solve the Bilevel Tolls Problem** (with Nataliya Kalashnykova and Fernando Camacho). – In: Jeng-Shyang Pan et al. (Eds), *Proceedings of the 3rd International Conference on Innovative Computing, Information and Control (ICIC'2008)*, Dalian, R.P. China, June 18 – 20, 2008. – 4 pp. ISBN 0-7695-3161-X.
 71. **Solving Nonlinear Implicit Complementarity Problems with Inexact Newton Methods** (with Nataliya Kalashnykova and Aarón Arévalo). – Ibid.

72. **Mixed Duopolies and the Welfare to the Society: A System Approach to the Economics of Duopolies** (with Mario Beruvides and Eduardo Cordero). – In: N. Minami (editor), *Proceedings of the 29th American Society for Engineering Management National Conference “Engineering Management: Leadership in Action” (ASEM’2008)*, United States Military Academy, West Point, New York, November 12 – 15, 2008. – 6 pp. ISBN 978-1-6056-0999-7.
73. **Conjectural Variations Equilibrium in a Mixed Duopoly** (with Claudia Kemfert and Vitaly Kalashnikov). – *The European Journal of Operational Research*, 2009, vol. 192, pp. 717 – 729.
74. **Cournot and Stackelberg Equilibrium in Mixed Duopoly Models** (with Eduardo Cordero and Vitaly Kalashnikov). – To appear in *Optimization*, Taylor & Francis, 2009. – 18 pp.
75. **Mathematical Model for Retail Stores Location in Competitive Environment** (with Neale Smith, Jorge Gama and Elisa Cobas-Flores). – To appear in the *International Journal of Innovative Computing, Information and Control*, Japan, ISSN: 1349-4198. – 14 pp.

Reviews published and accepted for publication in the Mathematical Reviews of the American Mathematical Society in total: 78

Scientific Meetings

- Number of communications to scientific meetings: 138 in total, including:

73. **Exceptional Families of Elements and Solvability of Implicit Complementarity Problems.** *The 5th International Symposium on Management Engineering (ISME’2008)*, Kitakyushu, Japan, March 15 – 17, 2008.
74. **Bilevel Toll Setting Problem: Dynamic Programming Algorithm.** – Ibid.
75. **Conjectural Variations Equilibrium: Applications to a Mixed Duopoly.** – An invited lecture at the XVIII National School in Optimizations and Numerical Analysis (ENOAN’2008), Saltillo, Coah., Mexico, April 20 – 25, 2008.
76. **Equilibria in Mixed Duopolies.** – An invited lecture at the XVIII-th Mexico Colloquium in *Mathematical Economics and Econometrics (CMEMEC’2008)*, Mexico City, D.F., Mexico, May 19 – 23, 2008.
77. **Solving Nonlinear Implicit Complementarity Problems with Inexact Newton Methods.** – *The 3rd International Conference on Innovative Computing, Information and Control (ICICIC’2008)*, Dalian, P.R. China, June 18 – 20, 2008.
78. **A Penalty Function Approach to Solve the Bilevel Tolls Problem.** – Ibid.
79. **Conjectural Variations Equilibrium in a Mixed Duopoly.** – An invited lecture at the Seminar of the Operations Research Department of the Beijing University of Technology (BJUT), Beijing, P.R. China, June 12, 2008.
80. **Mixed Duopoly and Conjectural Variations Equilibrium.** – An invited lecture at the Seminar of the Economics Department of the Dalian University of Technology (DLUT), Dalian, P.R. China, June 23, 2008.
81. **Stackelberg Equilibrium in a Mixed Duopoly.** – Ibid., June 24, 2008.
82. **Conjectural Variations Equilibrium in Generalized Oligopoly Models.** – An invited lecture at the Seminar of the Economics Department of the Harbin University of Commerce (HUC), Harbin, P.R. China, June 30, 2008.

83. **Generation of Permutations Based Upon Factorial Numbers.** – The 8th *International Conference on Intelligent System Design and Applications (ISDA'2008)*, Kaohsiung, Taiwan, November 26 – 28, 2008.
84. **Solving Bilevel Toll Assignment Problem by Penalty Function Algorithm.** – Ibid.
85. **Inexact Newton Algorithm to Solve Nonlinear Complementarity Problems.** – Ibid.
86. **A Human Migration Model: Numerical Experiments Baseds Upon Data of Three Cities at the Laguna Region.** – The 39th Congress of Research and Development at the Tecnológico de Monterrey (CIDTEC'2009), Monterrey, Mexico, January 15 – 16, 2009.
87. **Binomial Calculus: Advantages and Prospects.** – Ibid.

Languages:

English skills in speaking 100%, reading 100%, writing 100%;
Spanish skills in speaking 90%, reading 90%, writing 80%.

Ph.D. theses directed:

- (i) **José Fernando Camacho Vallejo**, ITESM, Campus Monterrey, Mexico; “Interior-Point Algorithms to Solve Bilevel Programs”, starting year 2005, finishing year 2009;
- (ii) **Gerardo Alfredo Pérez Valdés**, ITESM, Campus Monterrey, Mexico; “Solving Variational Inequality and Complementarity Problems”, starting year 2006, finishing year 2009.
- (iii) **Alvaro Eduardo Cordero Franco**, ITESM, Campus Monterrey, México; “Reduction of Bilevel Problems to Single-Level Ones with Equilibrium Constraints”, starting year 2006, finishing year 2009.

Master thesis directed:

- (i) **Marianna Yu. Popova**, Aviation University, Moscow, Russia: “*Existence of Equilibrium in a Network of Markets of a Homogeneous Product*”, finished in 1999.
- (ii) **Dimitri A. Yakimanskii**, Aviation University, Moscow, Russia: “*Calculation of Equilibrium in a Network of Markets of a Homogeneous Product*”, finished in 1999.
- (iii) **Irina O. Cherednikova**, Aviation University, Moscow, Russia: “*Coefficients of Influence of Agents in a Network of Markets of a Homogeneous Product*”, finished in 1999.
- (iv) **Nadezhda F. Semechkova**, Novosibirsk University, Novosibirsk, Russia: “*Solution of Linear Programming Problems by the Interior Point Method*”, finished in 1989.
- (v) **Marina A. Berdysheva**, Novosibirsk University, Novosibirsk, Russia: “*Barrier Functions to Solve Linear Programming Problems*”, finished in 1989.
- (vi) **Natalia A. Solodovnikova**, Novosibirsk University, Novosibirsk, Russia: “*Existence of Solutions for One Class of Nonlinear Complementarity Problems*”, finished in 1989.

Projects:

- (i) in 2000-2002, I participated as a principal investigator in the Russian Foundation for Basic Research (RFBR) project No. 00-01-00404 ‘Existence of Solutions to Complementarity Problems in Mathematical Models of Economics’;
- (ii) in 2001-2002, I was a principal investigator at the University of Nuevo Leon Research Foundation (UANL PAICYT) project No. CA562-01 ‘A Penalty-Function Approach to a Mixed-Integer Bilevel Programming Problems’;
- (iii) in 2003—2004, I was a principal researcher of the joint project with Dr. Stephan Dempe , “*Methods to Solve Bilevel Programming Problems by Penalty Approach with Applications to Natural Gas Industry*”, financially supported by DAAD-CONACyT, Ref.# J200.751/2003.
- (iv) Since 2004, I participate in the research project “Regularization Methods of the Labor Market Taking into Account the Inversion Policy as One of Essential Factors” financially supported by the Russian Foundation for Humanitarian Research (RGNF), Ref. # 04-02-00172, 2004 – 2006.
- (v) Since July of 2005, I participate in the research project “Solution of Complementarity and Variational Inequality Problems”, financially supported by the Mexican Committee for Science and Technology (CONACyT), Ref. # SEP-2004-C01-45786, 2005-2008.
- (vi) Since 2008, I participate in the research project “Regularization Methods of the Labor Market Under Conditions of Social and Economic Transformations in Russia” financially supported by the Russian Foundation for Humanitarian Research (RGNF), Ref. # 08-02-00271, 2008 – 2010.
- (vii) Since January 2009, I head the research activity in the framework of the CONACyT project “A Human Migration Model Applied to the Laguna Region”. The project is financially supported by the Mexican Committee for Science and Technology (CONACyT), Ref. # SEP-104914, 2009 – 2010.

Other Professional Activity:

1. Regular Member of the American Mathematical Society (AMS)
2. Regular Member of the Society for Industrial and Applied Mathematics (SIAM)
3. Regular Member of the Mexican Mathematical Society (SMM)
4. Regular Member of the Mexican Academy of Sciences (AMC)
5. Regular Member of the Russian Association of Mathematical Programming
6. Associated Editor of the *European Journal of Pure and Applied Mathematics* (EJPAM), ISSN 1307-5543 – www.ejpam.com
7. Board Member of the Committee of the International Society of Management Engineering (ISME), Japan. – <http://www.f.waseda.jp/watada/ISME/ISMEcommittee.htm>

Reviewer of papers submitted to the following magazines:

- 1) *Ekonomika i Matematicheskie Metody* (Central Economics and Mathematics Institute RAS,

- Moscow);
- 2) *Diskretnaya Matematika* (Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Novosibirsk).
 - 3) *SIAM Journal on Control and Optimization* (USA)
 - 4) *Mathematical Reviews* (USA)
 - 5) *Letters on Operations Research* (USA)
 - 6) *The International Journal of Mathematics and Mathematical Sciences* (USA)
 - 7) *The Information Sciences* (The Netherlands)
 - 8) *The European Journal of Operational Research* (The Netherlands)
 - 9) *Journal of Industrial and Management Optimization* (USA)
 - 10) *Discrete Optimization* (USA)
 - 11) *Journal of the Franklin Institute* (USA)
 - 12) *Central European Journal of Mathematics* (Austria)
 - 13) *The IEEE Transactions on Neural Networks* (USA)
 - 14) *Optimization* (Great Britain)
 - 15) *Optimization and Software* (The Netherlands)
 - 16) *Optimization Letters* (USA)
 - 17) *Journal of Mathematical Analysis and Applications* (USA)

DISTINCTION, AWARDS

- The talk **“Numerical Experiments with a Human Migration Model Applied to the Group of Constructions Workers and Based upon Data of Three Cities in the Laguna Region”** (joint with Ramón Luévanos Rojas) was distinguished as the Best Talk in the section “Intelligent Organizations” at the 3rd International Symposium in Telematic Systems and Intelligent Organizations, November 6 – 7, 2008, held at the University of Veracruz, Xalapa, Ver., Mexico.
- The paper **Multi-Valued Implicit Complementarity Problems: Perturbation Algorithm** (with Nataliya Kalashnykova and Aaron A. Franco) was distinguished with the Best Paper Award at the 2nd International Conference on Innovative Computing, Information and Control (ICICIC’2007), Kumamoto, Japan, September 5 – 7, 2007.
- Since October 2005, I am a Regular Member of the Mexican Academy of Sciences (AMC)
- In November 2005, my short biography was included into the Biographical Dictionary “Scientists and Technologists of Nuevo León”, Juan Roberto Zavala (Editor), Monterrey, Mexico, 2005, pp. 205 – 206.
- February 2005, I was awarded with the Annual Bonus of the Systems Engineering Department of the Monterrey Institute of Technologies for scientific productivity “Incentivo por Productividad”
- Member of the National Researchers Systems (Sistema Nacional de Investigadores) of Rank 2 (among 3 ranks), January 2006-December 2010.
- Member of the National Researchers Systems (Sistema Nacional de Investigadores) of Rank 2, July 2002-December 2005
- I was awarded with the Annual Bonus for Best Research Papers at the Central Economics and Mathematics Institute of the Russian Academy of Sciences, Moscow, in 1997.
- I was the research supervisor of the students’ work “Convergence of an Iteration Method for Solving Block-Wise Systems of Linear Equations”, awarded with a Medal by the Academy of Sciences of Ukraine in 1993.

Vyacheslav Kalashnikov
July 20, 2009