

# **CURRICULUM VITAE**

**VYACHESLAV LEONIDOVICH GIRKO**

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Name: **VYACHESLAV LEONIDOVICH GIRKO**

Date of birth: 16. 10. 1946, Place of birth: Vinnitca, Ukraine

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Languages: Ukraine, Russian, English, (speak, read and write well), German,  
Portuguese (speak, read and write)

References:

1. Prof. Stanislav Molchanov  
Department of Mathematics, University of North Carolina at Charlott,  
Charlotte NC 28223,  
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2. Prof. A.V. Skorohkod  
Michigan State University, Department of Statistics and Probability,  
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5. Prof. W. Kirsch,  
Institut fur Mathematik,  
Ruhr-Universitat Bochum Germany  
D-4630 Bochum 1, Germany

**Education:** Ukraine, Kiev University, Department of Mathematics and Mechanics: 1964-1969

**Under Graduation:**

**a). MSc:** Graduation in Kiev University, Department of Mathematics and Mechanics, 1968-1969,  
Ukraine

Title of the Thesis: "Limit Theorems for Random Determinants"  
Supervisor: Prof. Michajlo Yosipovich Yadrenko

**b). PhD (Candidate of Science):** , (Mathematics and Physics)  
Kiev University, Department of Mathematics and Mechanics, 1971-1972  
Title of Thesis: "Limit Theorems for Random Determinants"

**c). Doctor II (Highest Degree:** (Doctor of Sciences, Mathematics and Physics)  
Kiev University, Department of Mathematics and Mechanics 1975-1978  
Title of Thesis: "Spectral Theory of Random Matrices"

**Developed Courses :** General Statistical Analysis, Multidimensional Statistical Analysis and its Applications, Estimation of states and parameters of Control Systems, Stochastic Wiener-Kolmogorov filter, Modal Control, The Stochastic Ljapunov Problem, Adaptive approach to the Control of Manipulator Motion. (Kiev University, Ukraine; Bowling Green University, Ohio; Campinas University, Brazil.)

**Docent Experience:**

- 1). Multidimensional Statistical Analysis
- 2). Theory of Probability
- 3). Applied Statistical Analysis
- 4). Control Theory

**Professional Activity**

- 1). Visiting Professor and Researcher of the Universities of (Berlin, Dortmund, Kassel, Essen, Bochum) German , Switzerland, Poland, Jugoslavia, Italy, France, The Netherlands.
- 2). Visiting Professor of the Universities of Bowling Green 1993-1994, Distinguished Lukacs Professor of the Universities of Bowling Green, Ohio 1995-1996.
- 3). Professor Titular (Full Professor) MS 6, IMECC-UNICAMP, Brazil 1996-2000.
- 4). Full Professor of Department of Statistics and Probability, Michigan State University 2000-2002.
- 5). Full Professor of Department of Statistics and Mathematics, North Carolina State University 2003-2004.
- 6). Researcher of the Computer Science Laboratory of the University of Marne la Vallee Cedex 2, France, October 1-29, 2004.
- 7). Present position: the leading scientist researcher, Institute of Mathematics Tereshchenkivska Str.3 Kiev 252601 Ukraine e-mail: agirko@i.com.ua

## Participation in Symposiums end Conferences

(\*-International Conference)

### 1973

1. Limit Theorems for Eigenvalues of Random Matrices. The Materiels Of Symposium on Statistics of Random Processes, Kiev, 1973, 53-55 p.
2. Limit Theorems for Certain Functions of Random Matrices\*. The Theses international conference on Theory of Probability and mathematical statistics, Vilnius, 1973, 161-164 p.

### 1975

3. A Limit Theorem for the Theory of Random Matrices\*. Third Soviet-Japan Symposium on the theory of probability, Tashkent, 1975.

### 1977

4. Arctangent Law\*. The Theses of international conference on the theory of probability and mathematical statistics, Vilnius, 1977, 96-97 p.

### 1978

5. Spectral Control in Stochastic Systems. The Theses of the second Republic conference "Calculating Mathematics in the modern Scientific and Technical progress", 1978, Kiev, 129 p.

### 1979

6. Perturbation Method of Linear Operators in the Optimal Control Theory. The Theses of the Third conference "Optimal Control in Mechanics Systems", Kiev, 1979.

### 1981

7. Survey on the Theory of Random Matrices\*. The Theses of the Third Vilnius International Conference on the Theory of Probability and Mathematical statistics, 1981.
8. Generalized Wishart Distribution and Limit Theorem for Generalized Variance in Multidimensional Statistical Analysis. The Theses of the Second All Union Scientific and Technical conference "Application of Multidimensional Statistical Analysis in Economics and in Estimation of Quality of Production", Tartu, 1981.

### 1982

9. Invariance Principle of Stochastic Linear Control Systems. YI All Union Meeting "Invariance Theory, Sensitivity and their Applications". Moscow, 1982, 55-57 p.
10. Spectral Theory of non Selfadjoint Random Matrices\*. IY Soviet -Japan Symposium on the theory of probability and mathematical statistics, Tbilisi, 1982, 230-231 p.

### 1983

11. New Method of Proving Certain Limit Theorems. Probabilistic Methods in Discrete Mathematics. The Theses of Reports of All Union conference, Petrozavodsk, May 31-June 2 1983, 18-20 p.
12. Invariance Principle in probabilistic Simulation of Complex Systems and Stochastic Optimization. Scientific and Technical conference "Probabilistic Methods and Tools". The Theses of Reports, Novgorod, 1983, 59 p. (with.V. Krak).
13. Limit Theorems in the Theory of Adaptive Control. All Union conference "Theory of Adaptive Systems and their Applications" Leningrad, 1983, 118 p. (with I.N. Litvin).
14. Spectral Theory of Control System. 1X All Union Meeting on the Control Problems, Erevan, 1983. (with I.N. Litvin).
15. To the Unitary Theory of Fluctuation in Nuclear Reactions. The Theses of Reports of 33-rd Meeting on the Nuclear spectroscopy and Nuclear Structure . Moscow, April 19-21 1983, p. 422. (with V.S. Olchovskii and V.A. Chinarov).

#### 1984

16. Random Matrices in Certain Problems of Linear Stochastic Programming and Stochastic Control Theory\*. Stochastic Optimization The Theses of Reports of International conference, Kiev, 9-16 Sept. 1984, 61-62 p.
17. An Adaptive Approach to the Control of Motion of Manipulator. All Union Meeting on the robot technical systems. The Theses of Reports, Part 4, Voronez, 1984, 68 p. (with.V. Krak).

#### 1985

18. Elliptic Law\*. The Theses of Reports of the Forth International Vilnius Conference on the Theory of Probability and Mathematical statistics, Vilnius, 1985, 171-173 p.
19. The Struggle with Dimensionality in Multidimensional Statistical Analysis. All Union Scientific and Technical conference -Application of Multidimensional Statistical Analysis in Economics and in Estimation of Quality of Production". Part I, Tartu, 1985, 43-52 p.

#### 1986

20. Introduction in General Analysis\*. The 1st World Congress of the Bernoulli Society. Tashkent September 8-14 , 1986, p.203.

#### 1987

21. Introduction to  $G$ -Analysis. YI All Union School-Seminar "Parallelizing the Data Processing", The Theses of Reports, Part 1. Lvov, 1987, 24-25 p.
22. General Statistical Analysis. A Materials of All Union School Seminar TMP. Kyzyl, Part. 3, 1987, 38-56 p.
23. The Main Estimators of General Statistical Analysis. All Union School-Seminar "Program and Algorithmic Equipment of Applied Multidimensional Statistical Analysis," The Theses of Reports, Cachkachtzor. Arm. SSR, Part 1, 1987, 67-76 p.
24. An Application of  $G$ -analysis in the Pattern Recognition. The Third All Union Conference "Mathematical Methods of Pattern Recognition" Lvov, Part 1, 1987, 58-59 p.

#### 1988

25. A Class of Estimators  $G_8$  of Solution of System of Linear Algebraic Equations. Probabilistic Methods in Discrete Mathematics. The Theses of Reports of the Second All Union conference. Petrozavodsk, Karelia AN USSR, 1988, 29-30 p.

#### 1989

26. Some Estimators of Parameters in Regression Models. Mathematics Methods of Planning Design in Laboratory and Factories Investigations. The Theses of Republic Scientific and Technical conference. Kiev, April 18-22, 1989, 10 p.
27.  $G$ -Estimator of Stieltjes Transform of Spectral Functions of Singular Values. Mathematical Methods of Planning Design in Laboratories and Factories Investigations. The Theses of Republic Scientific and Technical conference. Kiev, April 18-22, 1989, 11 p. (with I.V. Stepachno).

28.  $G$ -Estimators of Eigenvalues of Covariance Matrices\*. The Fifth International Vilnius Conference on the Theory of Probability and mathematical Statistics. The Theses of Reports, V.3, 1989, 138-139 p.
29. Empirical System of Equations in Multidimensional Analysis. The Fifth All Union Scientific and Technical conference "Application of Multidimensional Statistical Analysis in Economics and in Estimation of Quality of Production", Khyriku, September 5-7, 1989, 74-75 p.
30. Asymptotically Normal Estimator of Stieltjes Transform of Spectral Function of Singular Values. The Sixth All Union Scientific and Technical conference "Application of Multidimensional Statistical Analysis in Economics and in Estimation of Quality of Production" Khyriku, September 5-7, 1989, 76-77 p. (with I.V. Stepachno).
31. Classification of Observations under Dimension of Space comparable with the volume of Samples. The Forth All Union Conference "Mathematical Methods of Pattern Recognition" Part 2. Section 1. Riga, 1989, 38-40 p. (with T.V. Pavlenko).
32. To the Question of Search of Eigenvalues of Random Matrices in the Pattern Recognition. "The Forth All Union Conference -Mathematical Methods of Pattern Recognition", Part. 2, Section 1, Riga, 1989, 41-43 p. (with I.V. Stepachno).

#### 1990

33. Diskriminant Analysis of Observations of Growing Dimension\*. DIANA 3. Bechyne. Czechoslovakia, 4-8 June, 1990,
34.  $G$ -consistent Estimators of Traces of Matrix Resolvents, Eigenvalues and Eigenvectors. International Congress of Mathematicians, Kyoto, JAPAN, August 21-29, 1990. Abstracts, Short Communications, p. 149.

#### 1991

35. Minimax Estimators and Control for Stochastic Systems\*. Pre-Conference to the 1991 Symposium on Mathematical Theory of Networks and Systems, Zhejiang University, Hanzhou, China, June 12-14, 1991.
36. Spectral Theory of Estimation\*. YI USSR - Japan Symposium on Probability Theory and Mathematical Statistics . Kiev, August 5-10, 1991, Abstracts of Communications. P. 42.

#### 1992

37. Integral Representation and Resolvent Methods for Solving Linear Stochastic Programming Problems of Large Dimension\*. 15th IFIP Conference on "system Modelling and Optimization", Zurich, Switzerland, September 2-6, Abstracts, Part 2, p. 314-315, 1992.
38. Spectral Equations  $S_2$  for Minimax Estimations of Solutions of Some Linear Systems\*. Third International Workshop on Model Oriented Data Analysis (Moda-3) St. Petersburg, Petrodvorets, Russia 25-30 May 1992 p.11.
39. Spectral Equations  $S_1$  and  $S_2$  for Minimax Estimations of Solutions of some Linear Systems Linear Minimax Estimation - Theory and Practice 3-4 August 1992, Oldenburg.

#### 1993

40. Canonical Spectral Equation\*. Sixth International Vilnius Conference, 1993.
41. The Linear Models with Interior Noises\*. International Conference on Linear Statistical Inference Poznan, 1993.
42. General Statistical Analysis\*. Joint Statistical Meetings, 1993, August 8-12, San Francisco. USA.

#### 1994

43. Limit Theorems for Eigenvalues of Random Matrices\*. Meeting on Matrix Analysis and its Applications. 21-23 September 1994, Vitoria-Gasteiz, Spain.

#### 1995

44. The Elliptic Law: Ten Years Later\*. Bad Honef. Disordered Structure and Random Matrices. Germany, May 20-25, 1995.

45. The Elliptic Law: Ten Years Later\*. Third Symposium on Matrix Analysis and Applications. Western Michigan University, Kalamazoo, MI. October 13–14, 1995.
46. Canonical Equation for Empirical Covariance Matrices\*. Proceedings of the 14-th International Conference on Multivariate Statistical Analysis, MSA95, Warsaw, Poland, December 7–8, p. 225–247.

#### 1996

47. Canonical Equation for Empirical Covariance Matrix and its Applications in Multidimensional Statistical Analysis (To the Memory of E. Wigner)\*, Multidimensional Statistical Analysis and Theory of Random Matrices (Sixth Eugene Lukacs Symposium), Bowling Green State University, Bowling Green Ohio 43403, March 29–30, 1996 (with A. Gupta).
48. The First Spacing Law\*. Workshop on Critical Phenomena. Barra de Sahi, Sao Paulo, Brazil.

#### 1997

49. Mimimax Estimators for Linear Regression Models\*. 5-a Escola de Modelos de Regressão Campos Do Jordão, Brasil, p.28.
50. Some Problems of Contemporary Random Matrix Physics\*. I Escola Brasileira de Probabilidade. IMPA., August 11-16, 1997 Rio de Janeiro, Brazil
51. The Relation Between Symmetric and Non Symmetric Operators.  $V$ -Region for Eigenvalues of Non Symmetric Random Matrices and Its Application in Some Problems of Spin Glasses and Neural Nets and Rigorous Proof of the Strong Circular and Elliptic Laws.\*. Micro, Macro, Meta. Workshop to Welcome Joel Lebowitz. IME-USP. São Paulo, Brazil. October 17-18, 1997

#### 1998

52. Melhoramento das Estimativas Estatísticas Principais da Análise Estatística Multidimensional e Aplicação do Mesmo em Alguns Problemas Práticos \*. 13<sup>o</sup> SINAPE, Simpósio Nacional de Probabilidade e Estatística Caxambu- MG. 27 a 31 de Julho de 1998, Brasil, p.28.
53. Stochastic Wiener - Kolmogorov Filter\*. II Escola Brasileira de Probabilidade. IMPA., Barra de Sahi, Sao Paulo, Brazil, August 2-6, 1998
54. Ten Years of General Statistical Analysis. Proceedings of the 17-th International Conference on Multivariate Statistical Analysis, MSA98, Warsaw, Poland, November 1998. (International Conference).

#### 1999

55. Twenty five Laws of the Theory of Random Matrices, III Escola Brasileira de Probabilidade, Angra dos Reis, August 1–7, 1999.
56. The  $V$ -relation between Hermitian and non Hermitian operators and some problems of neural nets and the theory of stochastic  $S$ -matrices, Adriatico Research Conference on "non-Hermiticity and Disorder" 23-26 August 1999.

#### 2000

57. Twenty Five Years of Canonical Stochastic Equation for Symmetric Random Matrices, "STOGRAM" Canonical Equation and its Relation with Circular, Elliptic and  $V$ -Laws. Workshop on Free Probability and Random Matrices 5-9 June, 2000 at Sandbjerg Manor, Denmark.

#### 2003

58. V. L. Girko. The Circular law. Twenty years later. Abstracts of International Summer Seminar "Stochastic Dynamical Systems", pp.16–17. May 30-June 3, 2003 at Sudak, Crimea, Ukraine.

#### 2004

59. V. L. Girko. The main estimators of general statistical analysis. Abstracts of 23rd Conference on Multidimensional Statistical Analysis, pp.6. November 8–10, 2004. Lodz, Poland.

## Published and submitted articles and books

(\* - in Russian)

#### 1970

1. On Inequalities for Random Determinant\*. *The Fifth scientific conference of young mathematicians of Ukraine*. Institute of Mathematics AN USSR 1970.
2. On the Distribution of Solution of the System of Linear Equations with Random Coefficients. *Theory of Probability and Mathematical Statistics* N.2, 1970, 41-44 p.

#### 1971

3. Limit Theorems for Permanent of Random Matrices. *Theory of Probability and Mathematical Statistics*, N.3, 1971, 29-34 p.
4. Inequalities for a Random Determinant and a Random Permanent. *Theory of Probability and Mathematical Statistics*, N.4, 1971, 48-57 p.
5. Limit Theorems for a Random Determinant I. *Theory of Probability and Mathematical Statistics*, N.5, 1971, 27-33 p.

#### 1972

6. Limit Theorems for a Random Determinant II, *Theory of Probability and Mathematical Statistics*, N.6, 1972, 41-48 p.
7. A sharpening of certain theorems for a random determinant and permanent. *Theory of Probability and Mathematical Statistics*, N.7, 1972, 28-32.
8. Certain limit theorems for random determinant\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, 300-302, 1972.

#### 1973

9. Limit theorems for random quadratic forms. (Russian) *Certain questions on simulation and systems control (Russian)*, pp. 14-30. *Izdat. "Naukova dumka"*, Kiev, 1973.
10. Limit Theorems for Determinants of Dominant Random Matrices\*. *Calculating and Applied Mathematics*, N.19, 1973, 130-136 p.
11. Limit Theorems for a Random Determinant III. *Theory of Probability and Mathematical statistics*, N.8, 1973, 25-30 p.
12. Limit Theorems for Random Quadratic Forms 1. *Theory of Probability and Mathematical Statistics*, N.9, 1973, 63-67 p.
13. Limit Theorems for the Solution of Systems of Linear Random Equations and the Eigenvalues and Determinant of Random Matrices, *Soviet Mathematics Reports*, **212**, 1973, 1039-1042 p.
14. Random Determinants. *Theory of Probability and Its Applications*, **18**, N.4, 1973, p.828.

#### 1974

15. On Limit Theorems for Random Quadratic and Bilinear Forms\*. *Theory of Random Processes*, N.2, 34-37p. 1974.
16. Limit Theorems for Eigenvalues of Random Matrices. *Theory of Probability and Its Applications*, **19**, N.2, 1974, p. 422.
17. Foundations of Random matrix Theory. *Theory of Probability and Its Applications*, **21**, N.5, 1974, 645-649.
18. Limit Theorems of a General Form for the Spectral Functions of Random Matrices\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, **106**, 1974, 874-876 p.
19. The Eigenvalues of Random Matrices 1. *Theory of Probability and Mathematical Statistics*, N.11, 1974, 10-16 p.
20. Limit Theorems for Eigenvalues of Random Matrices. *Soviet Mathematical Reports*, **215**, N.2, 1974, 1038-1040 p.
21. Systems of Liner Random Algebraic Equations.\* *Simulation and Optimization of Control Systems*, Publishing of Kiev University, 1974, 70-77 p.

#### 1975

22. **Random Matrices\*** ( monograph ). Publishing of Kiev University, 1975, 448 p.
23. Limit Theorems for Random Quadratic Forms II, *Theory of Probability and Mathematical Statistics*, N.10, 1976, 47-54 p.
24. Random Jacobi Matrices 1. *Theory of Probability and Mathematical Statistics*, N.12, 1976, 25-35 p.

## 1976

25. On the Van der Waerden Hypothesis\*. *In the Science of Mathematics*, N.6, Kiev, 1976.
26. A Limit Theorem for Products of Random Matrices. *Theory of Probability and its Applications* **21**, N.1, 1976, 197–199 p.
27. Spectral Theory of Random Matrix. *Theory of Probability and its Applications* **21**, N.1, 1976, 209–211.
28. Lindebergs Condition for Borel Functions of Independent Random Variables\*. *Bulletin of Kiev University, Series of Mathematics and Mechanics*, N.18, 1976, 3–6 p.

## 1977

29. The Frechet Hypothesis\*. *In the Science of Mathematics*, N.8, 1977.
30. Limit Theorems of General Type for Spectral Functions of Random Matrix. *Theory of Probability and its Applications*, **22**, N.1, 1977, 156–160 p.
31. On Stability of Some Systems of Differential Equations With Random Coefficients\*. *Calculating and Applied Mathematics*, N.31, 1977, 128–131 p. (With A.V. Vinogradskaya).
32. Limit Theorems of the General Type for Normalized Spectral Functions of Symmetric Random Matrices\*. *Collection of the Limit Theorems for Random Processes. Publishing of the Institute of Mathematics AN USSR*, Kiev, 1977, 50–70 p.

## 1978

33. The Stochastic Ljapunov Problem, *Theory of Probability and Mathematical Statistics*, N.20, 1978, 49–50.
34. The Wigner Semicircle Law. *Theory of Probability and Mathematical Statistics*, N.20, 1978, 45–47 p.
35. Limit Theorems for Borel Functions of Independent Random Variables. *Theory of Probability and its Applications*. **23**, N.4, 845–845, 1978.
36. On Central Limit Theorems for Random Determinant. *Theory of Probability and Mathematical Statistics*, N.21, 1978, 37–41 p.
37. Spectral Control of Linear Operators in Hilbert Space\*. *Calculating and Applied Mathematics*, N.38, 1978, 111–114 p. (With A.V. Vinogradskaya)
38. Joint distribution of eigenvalues and eigenvectors of random matrices. *Theory of probability and its applications* **23**, N.1, 1978, 212–212.
39. Semicircular Wigner Law. *Theor. prob. and its appl.*, **23**, N.1, 1978, 217–217.

## 1979

40. The Central Limit Theorem for Random Determinants, *Theory of Probability and its Applications* , **24**, N.4, 1979, 729–740 p.
41. Spectral Control of Some Unbounded Linear Operators\*. *Calculating and Applied Mathematics*, N.39, 1979, 123–129 p. (With A.V. Vinogradskaya).
42. Law of logarithm\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.4, 243–244, 1979.
43. Canonical Spectral Equation\*. *Probability Distribution in Infinite Dimensional Spaces*” Institute of Mathematics AN USSR, Kiev, 45–48, 1979.
44. The Distribution of the Eigenvalues and Eigenvectors of Hermitian Random Matrices. *Ukrainian Mathematical Journal*, **31**, 533–537, 1979.
45. Necessary and Sufficient Conditions of Limit Theorems for Borel Functions of Independent Random Variables\*. *Reports AN USSR, Series of Mathematics, Mechanics*, N.10, 787–789, 1979.
46. Moments of reciprocal Random Matrices\*. *Operation Research and ASU*, N.14, 1979, 127–130 p.
47. Accompanying Infinitely Divisible Laws for Sums of some Dependent Random Variables. *Theory of Probability and its Applications*, **24**, N.3, 1979, 651–652 p.

## 1980

48. Uniqueness of the Solution of the Canonical Spectral Equation, *Ukrainian Mathematical Journal*, N.32, 1980, 802–804 p.
49. Limit Theorems for Stochastic Leonteff Systems\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.12, 3–6, 1980. (with V.V. Smirnova).
50. **Theory of Random Determinants\*** (monograph). Publishing of Kiev University, 1980, 368 p.

51. Limit Theorems for Eigenvalues of the Product of Independent Random Matrices with Nonnegative Entries\*. *Calculating and Applied Mathematics*, N.42, 1980, 29–35 p.
52. Inverse tangent law\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.4, 7–9, 1980.
53. On Normalized Spectral Functions of Random Matrices. *Theory of Probability and Mathematical Statistics*, N.22, 1980, 31–34 p.
54. A conjecture of E. Wigner\*. *Calculating and Applied Mathematics*, N.41, 1980, 71–79 p.
55. Stochastic Spectral Equation. *Lecture Notes in Control and Information Sciences. Stochastic Differential Systems. Filtering and Control*. Proceedings of the —F— P-WG 7/1, Working Conference Vilnius, Lithuania, USSR, Aug 28 - Sept 2 1978. Springer - Verlag Berlin. Heidelberg New York, 354–363p. 1980.
56. Infinitely Divisible Laws for Sums of Dependent Random Variables\*. *Bulletin of Kiev University, Series of Mathematics and Mechanics*, N.22, 1980, 9–14 p.

### 1981

57. On Normalized Spectral Functions of Random Matrices, *Theory of Probability and Mathematical Statistics*, N.22, 1981, 31–34 p.
58. The Polar Decomposition of a Random Matrix. *Theory of Probability and Mathematical Statistics*, N.23, 1981, 21–31 p.
59. On New Method of Proving Some Limit Theorems for Product of Independent Random Matrices. *Theory of Probability and Mathematical Statistics*, N.22, 1981, 35–47 p.
60. Accompanying Infinitely Divisible Laws for Sums of some Dependent Random Variables\*. *Theory of Random Processes*, N.9, 25–27, 1981.
61. The Central Limit Theorem for Random Determinants. *Theory of Probability and its Applications*, **26**, N.3, 1981, 521–531 p.
62. Limit Theorems for Nonnegative Definition Form of certain Dependent Random Variables. *Ukrainian Mathematical Journal*, N.1, 54–57, 1981.
63. Spectral Control for Hilbert - Schmidt Operators\*. *Calculating and Applied Mathematics*, N.45, 38–42, 1981. (with A.V. Vinogradskaya).
64. Regularized Method in Spectral Control of Unbounded Operators\*. *Calculating and Applied Mathematics*, N.43, 1981, 60–67 p.
65. Limit Theorems for Quadratic Forms of Dependent Random Variables. *Theory of Probability and its Applications*, **26**, N.3, 1981, 634–635 p.
66. Central Limit Theorem for Functional of Products of Certain Random Matrices. *Theory of Probability and its Applications*, **26**, N.4, 1981, 865–866 p.

### 1982

67. Limit Theorems for Determinants of Random Jacobi Matrices. *Theory of Probability and Mathematical Statistics*, N.24, 1982, 19–29. (with V.V. Vasilev).
68. Distribution of Eigenvalues and Eigenvectors of Unitary Random Matrices. *Theory of Probability and Mathematical Statistics*, N.25, 1982, 13–16 p.
69. Central Limit Theorem for Functional of Product of Independent Random Matrices\*. *Calculating and Applied Mathematics*, N.47, 1982, 118–122 p.
70. The V-Transformation\*. *Dopovidi Akademii nauk Ukrainskoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.3, 1982, 5–6 p.
71. Limit Theorems for Product of Independent Random Matrices with Positive Entries. *Theory of Probability and its Applications*, **27**, N.4, 1982, 837–844 p.
72. New Method of Proving of Some Limit Theorems in the Theory of Pattern Recognition\*. *Cybernetics*, N.3, 1982, 117–118 p. (with N.I. Borodaynskii).

### 1983

73. Eigenvalues of Random Matrices II. *Theory of Probability and Mathematical Statistics*, N.27, 1983, 31–32.

74. Limit Theorems for Sums of Random Variables Connected in a Markov Chain 1. *Theory of Probability and Mathematical Statistics*, N.26, 1983, 23–25 p.
75. Spectrum Control in Systems Described by Linear Equations in Hilbert Spaces. *Automation and Telemechanics*, N.5, 1983. (With A.V. Vinogradskaya).
76. Limit Theorems for nonnegative defined quadratic forms of dependent random variables\*. *Theory of Random Processes*, N.11, 1983, 19–25 p.
77. **Limit Theorems for Functions of Random Variables\*** (monograph). Publishing "Higher School", Kiev, 1983, 207 p.
78. Spectral Function Method in the Planning Design\*. *Dopovidi Akademii nauk Ukrainsoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.2, 61–63, 1983. (with M. Onsha).
79. Stochastic Kalman Condition\* *Calculating and Applied Mathematics*, N.49, 1983, 135–138 p. (with I. N. Litvin).
80. Asymptotic Methods of Solution of Some Problems of Linear Stochastic Programming and model of the Supply-Demand Type\*. *Preprint 83-28, Institute of Cybernetics*, Kiev, 1983, 32 p. (with V. V. Smirnova)
81. Integral Representation Method of Solving a Problem of Linear Stochastic Problems. *Cybernetics*, N.6, 1983, 122–124 p. (with V.V. Smirnova).
82. Spectral Theory of Nonsel-adjoint Random Matrices. *Probability Theory and Mathematical Statistics. Proceedings USSR-Japan Symposium*. Tbilisi, Aug. 23–29, 1982. Lectures Notes Mathematics, 1021, 1983, 153–156 p.

#### 1984

83. Central Limit Theorem for Spectral Functions of Random Jacobi Matrices. *Theory of Probability and Mathematical Statistics*, N.29, 1984, 37–41 p. (with V. V. Vasilev).
84. On the Circle Law. *Theory of Probability and Mathematical Statistics*, N.28, 1984, 15–23 p.
85. Resolvent Method of Solving Problem in Planning Design\*. *Calculating and Applied Mathematics*, N.52, 1984, 129–132 p. (with M. Onsha).
86. Integral Representation of Hyperdeterminants and Its Applications to Investigation of Stability of Stochastic Systems\*. *Controlled Dynamical Systems With Continues and Discrete Parameters*, Kiev, *Naukova Dumka*, 1984, 97–102 p. (with I.N. Litvin).
87. Distribution of the Eigenvalues of Gaussian Random Matrices. *Ukrainian Mathematical Journal* **36**, N.1, 1984, 9–12 p. (with T.S. Kokobinadze and O.G. Chajka).
88. To the Theory of Fluctuation of Unitary  $S$ -matrix in Nuclear Reaction. *Reports of AN SSSR, Physics series*, **48**, N.1, 1984, 166–171 p. (with V. S. Olchovskii and V.A. Chinarov).
89. The Circle Law. *Theory of Probability and its Applications*, **29**, N.5, 1984.

#### 1985

90. Regularized  $V$ -transformation. *Theory of Probability and its Applications*, **29**, N.2, 1984, 416–417 p.
91. Spectral Theory of Random Matrices. *Russian Mathematical Surveys*, **40**, N.1, 1985, 77–120 p.
92. Limit Theorems for the Normalized Spectral Functions of Nonsel-Adjoint Random Jacobian Matrices, *Theory of Probability and its Application*, **30**, N1, 1985. (With V.V. Vasilev).
93. An Elliptic Law\*. *Dopovidi Akademii nauk Ukrainsoj RSR*, Seriya A - Fiziko-matematichni ta technichni nauki, N.1, 56–59, 1985.
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**PhD projects supervision:** 13 candidates have received PhD under my supervision.

1. Alla Viktorovna Vinogradskaya, (Ukraine)  
"Spectral Control of Linear Operators of Dynamical Systems", March 6, 1980, Department of Cybernetics, Kiev State University
2. Vadim Valerievich Vasilev (Ukraine)  
"Limit Theorems for Spectral Functions of Random Jacobi Matrices", December 26, 1983, Department of Mechanics and Mathematics, Kiev State University
3. Valentina Vladimirovna Smirnova, (Ukraine)

"Asymptotic Methods of Solution of Some Problems of Linear Stochastic Programming and model of the Supply-Demand Type", 1984, Department of Cybernetics, Kiev State University

4. Igor Nikolaevich Litvin, (Ukraine)

"Spectral Approach to the Investigation of Controlled Systems", April 10, 1984, Department of Cybernetics, Kiev State University

5. Soler Rodrigues Gilermo Diego (Cuba)

"Optimal Estimators of parameters in some problems of control and estimation", April 20, 1987, Department of Cybernetics, Kiev State University

6. Yuriy Michailovich Onsha (Ukraine)

"Spectral Function Method in the Planning Design", June 25, 1987, Department of Cybernetics, Kiev State University

7. Yuriy Vasilevich Krak (Ukraine)

"Optimization and Adaptive Approach and Investigation on Computers the Mathematical Models of Robot-Manipulator", January 6, 1987, Department of Cybernetics, Kiev State University

8. Temur Sergeevich Kokobinadze (Georgia)

"Distribution of the Eigenvalues of Non Self Adjoint Random Matrices", June 8, 1987, Department of Mechanics and Mathematics, Kiev State University

9. Aleksandr Konstantinovich Matvejcuk (Ukraine)

"An Estimators of solution of Wiener-Kolmogorov equation", 1988

10. Grigorij Viktorovich Akulov (Ukraine)

"The theorems of the Law of Large Number Type for Functionals of Product of Random Matrices and Their Application in Mathematical Statistics", January 15, 1990, Department of Cybernetics, Kiev State University

11. Tatyana Vladimirovna Pavlenko (Ukraine)

Classification of Observations of Growing Dimension, 1990, Department of Cybernetics, Kiev State University

12. Irina Vasilevna Stepachno (Ukraine)

"Consistent Estimators of Singular Eigenvalues of Random Matrices", 1991, Department of Cybernetics, Kiev State University

13. Aleksandr Sergeevich Babanin (Ukraine)

"Estimation and Calculation on Computers a Solutions of System of Linear Algebraic Equations with random values", 1992, Department of Cybernetics, Kiev State University

#### **Honors and awards:**

Ukrainian Republic "Ostrowsky" Prize (1978)

Ukrainian Republic "Higher Educational Schools" Prize (1987 )

Kiev University "Shevchenko" Prize (1990 )

Academy of Science of Ukraine "N. M. Krylov" Prize (1993)

Distinguished Lukacs Professor of Bowling Green University, Ohio, USA, 1995-1996

#### **Books:**

1. 1975 - **Random Matrices**. Publishing of Kiev University, 448p. (in Russian).

2. 1980 - **Theory of Random Determinants**. Publishing of Kiev University, Kiev, 368p. (in Russian).

3. 1983 - **Limit Theorems for Functions of Random Variables**. Publishing "Higher School", Kiev, 208p. (in Russian).

4. 1988 - **Spectral Theory of Random Matrices**. Publishing "Science", Moscow, 376p. (in Russian).

5. 1988 - **Multivariate Statistical Analysis**. Kiev, 320p. (in Russian).

6. 1990 - **Theory of Random Determinants**. KLUWER Publishers (Netherlands) 678p.

7. 1990 - **Theory of Systems of Empirical Equations**. Publishing "Lybid", Kiev. 264p. (in Russian).

8. 1995 - **Statistical Analysis of Observations of Increasing Dimensions.**  
Kluwer Publishers (Netherlands) 278p.
9. 1996- **Theory of Linear Algebraic Equations with Random Coefficients** Allerton Press. Inc.  
New York 320p.
10. 1998- **An Introduction to Statistical Analysis of Random Arrays.** VSP. 674p.
- 11 2001- **Theory of stochastic canonical equations.** Kluwer Publishers (Netherlands), Volumes I  
(497p.) and II (493p.)

**Fields of mathematics, where deep original results obtained:**

Multivariate Statistical Analysis, Discriminant Analysis, Experiment Planning, Identification and Control of Complex Systems, Pattern Recognition, Statistical Methods in Physics, Theory of Linear Random Operators, Noise Filtration, Matrix Analysis.

**Examples of my scientific contribution:**

the Circle Law, *Girko's Circular Law: Let  $\lambda$  be Eigenvalues of a set of Random  $n \times n$  Matrices. Then  $\lambda/\sqrt{n}$  is uniformly distributed on the Disk.* CRC Concise Encyclopedia of Mathematics on CD-ROM, 1996-9 Eric W. Weisstein

the Elliptic Law,

the Logarithmic Law,

the Arctangent Law,

the **V**-Transform,

the Canonical Spectral Equation,

Method of Integral Representation,

Method of Orthogonalization,

Theory of General Statistical Analysis,

**S**-estimators, **G**-estimators.

**Professional Affiliations**

Member of American and Ukrainian Mathematical Societies

Coeditor of the international journal "Random Operators and Stochastic Equations".

Member of "Who is Who in the World".

Organized a Symposium "Multidimensional Statistical Analysis and Theory of Random Matrices" in Bowling Green State University USA, 1996.

**Marital status:** Married, 2 daughters ( 29 and 26 years old )

**Teaching experience:**

Kiev University, Ukraine 1972-1993, 1994-1995 Lecturer, Associate Professor, Full Professor).

Kiev Mogyla Academy, Ukraine 1994 (Full Professor).

Bowling Green State University, USA, 1993-1994, 1995-1996 (Professor).

Universidade Estadual de Campinas, Brazil, 1996-2000 (Professor Titular).

Michigan State University, USA, 2000-2002 (Full Professor).

North Carolina State University, USA, 2003-2004 ( Professor).

Signature

Kiev, November 17, 2004