

Vita

Vladimir P. Kurenok
Assistant Professor of Mathematics
Natural and Applied Sciences
University of Wisconsin-Green Bay
2420 Nicolet Drive, Green Bay, WI 54311
(920) 465-2582
kurenokv@uwgb.edu

Education

- Belarus State University, Minsk, Belarus, 1991
Degree: Candidate of Science in Physics and Mathematics [Ph.D]
Dissertation: "On the Solutions of Stochastic Differential Equations with Singular Coefficients".
Advisor: Prof. Dr. N. M. Suev
- Belarus State University, Minsk, Belarus, 1986-1990
Department of Probability Theory and Mathematical Statistics, post-graduate course in probability theory and mathematical statistics
- Friedrich-Schiller-University, Department of Mathematics, Jena, Germany, 1983-1986
Degree: Graduate Mathematician [Masters in Mathematics]
Thesis: "Investigations of Stochastic Differential Equations via Time Change Method"
Advisors: Prof. Dr. H.J.Engelbert, Dr. W.M.Schmidt
- Belarus State University, Minsk, Belarus, 1981-1983
Undergraduate study at the Department of Applied Mathematics

Non-Degree Education/Training

- Society of Actuaries (SOA), 475 N. Martingale Rd, Schaumburg, IL 60173
Passed Course 1, 2002
- Republic of Belarus, State Supreme Certifying Commission, 2001
Awarded Academic Title of Senior Lecturer (Assistant Professor, Reader) in Mathematics
- Ruhr-University Bochum, Bochum, Germany, 1993-1994
Department of Mathematics, DAAD (German Academic Exchange Service) Scholarship

Professional Experience

- University of Wisconsin-Green Bay, Natural and Applied Sciences, Assistant Professor of Mathematics, 2003 - present
- Washington University in St. Louis, School of Engineering and Applied Science, Department of Systems Science and Mathematics, Adjunct Professor of Mathematics, 2002-2003, summer 2006
- University of Missouri-St. Louis, Department of Mathematics and Computer Science, Adjunct Professor of Mathematics, 2002-2003
- St. Louis University, Department of Mathematics and Mathematical Computer Science, Adjunct Assistant Professor of Mathematics, 2002-2003
- Maryville University of St. Louis, School of Liberal Arts and Professional Programs, Adjunct Assistant Professor of Mathematics, 2001
- Belarus State University, Minsk, Department of Mathematics and Mechanics, Senior Lecturer in Mathematics (Assoc. Prof.), 1998-2001; Assistant Professor of Mathematics, 1994-1998; Research Associate, 1990-1994
- Ruhr-University Bochum, Department of Mathematics, recipient of a DAAD Fellowship, 1993-1994

Publications in Referred Journals

24. V.P. Kurenok, "Time change method and SDEs with nonnegative drift", accepted by *Canadian Mathematical Bulletin*, pp.1-16.
23. V.P. Kurenok, "On driftless one-dimensional SDEs with respect to stable Levy processes", *Lithuanian Mathematical Journal*, **Vol. 47**, No. 4, 2007, 423-435.
22. V.P. Kurenok, "Stochastic equations driven by a Cauchy process", to appear in Lecture Notes in Mathematical Sciences, *Markov Processes and Related Topics: A Festschrift for Thomas G. Kurtz*, pp.1-8.
21. V.P. Kurenok, "On a model of term structure of interest rate processes of stable type", to appear in *New Zealand Journal of Mathematics*, pp. 1-14.
20. V.P. Kurenok and A.N. Lepeyev, "On multidimensional SDEs with locally integrable coefficients", *Rocky Mountain Journal of Mathematics*, **Vol. 38**, No. 1, 2008, 139-174.
19. V.P. Kurenok, "A note on L_2 -estimates for stable integrals with drift", *Transactions of AMS*, **Vol. 300** (2008), no. 2, 925-938.
18. V.P. Kurenok, "Stochastic equations with time-dependent drift driven by Levy processes", *Journal of Theoretical Probability*, **Vol. 20** (2007), no. 4, 859-869.
17. V.P. Kurenok, "Stochastic equations with multidimensional drift driven by Levy processes", *Random Operators and Stochastic Equations*, **Vol. 14**, no. 4, 2006, pp. 311-324.

16. H.J. Engelbert, V.P. Kurenok and A. Zalescu, "On existence and uniqueness of reflected solutions of stochastic equations driven by symmetric stable processes", In: *"From Stochastic Calculus to Mathematical Finance"*, *The Shiryaev Festschrift*, Springer Verlag, 2006, pp. 227-249.
15. V.P. Kurenok and A.N. Lepeyev, "Multidimensional SDEs with unbounded drift", *Proceedings of the Academy of Sciences of Belarus*, Vol. 12, 2004, pp. 107-110.
14. V.P. Kurenok and H.J. Engelbert, "On one-dimensional stochastic equations driven by symmetric stable processes", Series Stochastic Monographs, Volume 12, *Stochastic Processes and Related Topics*, edited by R. Buckdahn, H.J. Engelbert, and M. Yor, Taylor and Francis, London and New York, 2002, pp. 81-110.
13. V.P. Kurenok and H.J. Engelbert, "On multidimensional SDE's without drift and with time-dependent diffusion matrix", *Georgian Mathematical Journal*, Vol. 7, No. 4, 2000, pp. 643-664.
12. V.P. Kurenok, "Existence of solutions of stochastic equations driven by stable Levy processes", *Reports of the Academy of Sciences of Belarus*, No. 1, 2001, pp. 63-68.
11. V.P. Kurenok, "On the "zero-one law" of the integral functionals of quasi-stable processes", *Proceedings of the Academy of Sciences of Belarus*, Vol. 44, No. 3, 2000, pp. 33-36.
10. V.P. Kurenok, "On weak convergence of random walks to symmetric stable processes", *Proceedings of the international conference AMADE*, Minsk, Institute of Mathematics of the Academy of Sciences of Belarus, Vol. 6, 2000, pp. 109-112.
9. V.P. Kurenok, "On the existence of global solutions of stochastic differential equations with time-dependent coefficients", *Proceedings of the Academy of Sciences of Belarus*, Vol. 44, No. 1, 2000, pp. 30-34.
8. V.P. Kurenok, "On multidimensional stochastic differential equations driven by Brownian motion", *Proceedings of the international conference "Dynamical Systems: Stability, Control, Optimization"*, Minsk, Vol. 2, 1998, pp. 168-170.
7. V.P. Kurenok, "On the representation property of some diffusion processes", *"Operators and Operator equations"*, Novocherkassk, 1995, pp. 39-44.
6. V.P. Kurenok, "On weak solutions of SDE's with singular diffusion coefficient", *Proceedings of the conference "Modern Problems of Informatics"*, Minsk, 1990, pp. 78-79.
5. V.P. Kurenok, "On some properties of solutions of stochastic differential equations with special diffusion coefficient", *Reports of the Academy of Sciences of Belarus*, 1990, Dep. 31.01.90, No. 602-B90, pp. 1-16.
4. V.P. Kurenok, "Existence of solutions of stochastic differential equations without drift by local integrability of the coefficient a^{-2} ", *Vestnik of Belarus State University*, Ser. 1, 1990, No. 1, pp. 43-46.
3. V.P. Kurenok, "On the existence of solutions of one-dimensional stochastic differential equations", *Reports of the Academy of Sciences of Belarus*, 1989, No. 4, pp. 38-43.

2. V.P. Kurenok, "On the classification of solutions of stochastic differential equations with a special diffusion coefficient", *Vestnik of Belarus State University*, Ser. 1, 1989, No. 1, pp. 64-66.
1. V.P. Kurenok, "On the existence of solutions of multidimensional stochastic differential equations", *Reports of the Academy of Sciences of Belarus*, Dep. 11.04.88, No. 2686-B88, 1988, pp.1-16.

Technical Reports and Other Publications

1. H.J. Engelbert, V.P. Kurenok and A. Zalescu, "On reflected solutions of stochastic equations driven by symmetric stable processes", Preprint (2004) Math/Inf/07/04, University of Jena, pp. 1-18.
2. H.J. Engelbert and V.P. Kurenok, "On one-dimensional stochastic equations driven by symmetric stable processes", Preprint (2000) Math/Inf/00/14, University of Jena, pp.1-28.
3. V.P. Kurenok, "On a model for the term structure of interest rate processes of stable type", published in electronic form in the *Proceedings of the 8th Symposium on Finance, Banking and Insurance*, Karlsruhe, Germany, 1999, pp.1-12 (<http://citeseer.nj.nec.com>).
4. S. Albeverio and V.P. Kurenok, "On multidimensional stochastic differential equations with time-dependent coefficients", SFB 237, Preprint No. 221 (1994).
5. E. Krushevski and V.P. Kurenok, "On some functional equations arising in the queuing theory", SFB 237, Preprint No. 223 (1994).
6. V.P. Kurenok, "On solutions of stochastic differential equations with singular coefficients", Ph. D. Thesis, 1991, pp. 1-128 (in Russian).

Papers Submitted

1. V.P. Kurenok, "On stochastic equations with measurable coefficients driven by symmetric stable processes" (*Stochastic Analysis and Applications*), pp.1-18.
2. V.P. Kurenok, "On stochastic equations of Ito type with jumps" (*Statistics and Probability Letters*), pp. 1-14.
3. V.P. Kurenok, "A note on absolute value of a symmetric stable process" (*Electronic Communications in Probability*), pp.1-12.
4. V.P. Kurenok, "On some integral estimates and solutions of stochastic equations driven by symmetric stable processes" (*Theory of Probability and Its Applications*), pp.1-12.
5. V.P. Kurenok, "A remark on the existence of solutions of integral equations with discontinuous right-hand side" (*Journal of Integral Equations and Applications*), pp. 1-6.

Papers in Progress or Revision

1. "On weak solutions of multiparameter time change equations".

2. "Integral functionals of Levy processes with drift" (joint with H.J.Engelbert).
3. "Stochastic differential equations with measurable coefficients" (Survey paper).
4. "On some integral estimates for symmetric stable processes" (revision).

Teaching Publications at Belarus State University

1. Introduction to Stochastic Analysis. The Martingale Approach, published by Eridan, Minsk, 2000 (in Russian).
2. Elements of the General Theory of Stochastic Processes, published by Eridan, Minsk, 2000 (in Russian).
3. (joint with A.V. Lebedev, J.V.Lysenko, and O. N. Sorokoletova) Extreme Problems of Graph Theory, published by Belarus State University, Minsk, 2000, 64 pages (in Russian).

Ph.D. Dissertation

The Ph.D. Dissertation with the title "On solutions of stochastic differential equations with singular coefficients" was defended on December 25, 1991. Advisor: Prof. N.M. Suev

Organizational Activities

- Co-organization of a special session during the 32th International Conference on Stochastic Processes and Their Applications at the University of Illinois, Urbana-Champaign, August 6-10, 2007
- Organized a Special Session "Stochastic Evaluation Equations and Related Topics" during the "5th International Conference on Differential Equations and Dynamical Systems", University of Texas-Pan American, December 16-18, 2006

Conference Presentations and Invited Talks

(most recent)

- "Existence and uniqueness of solutions for SDEs associated with the fractional Laplacian", "5th International Conference on Differential Equations and Dynamical Systems", University of Texas-Pan American, December 16-18, 2006
- "On Krylov's estimates for Levy processes and their applications to SDEs", "Asymptotic Analysis in Stochastic Processes, Nonparametric Estimation, and Related Problems", conference in honor of Rafail Z. Khasminskii on the occasion of his 75th birthday, Wayne State University in Detroit, September 15-17, 2006
- "On L2-estimates of stable integrals with drift", Conference on Markov Processes and Related Topics in honor of Tom Kurtz on the occasion of his 65th birthday, University of Wisconsin-Madison, July 10-13, 2006

- "On reflected solutions of stochastic equations driven by symmetric stable processes", Conference on Martingales, Potential Theory and Stochastic Analysis, University of Florida in Gainesville, November 10-12, 2005
- "On multidimensional SDE's with locally integrable coefficients", Conference on Stochastic Control and Numerics, University of Wisconsin-Milwaukee, September 15-17, 2005
- "On existence and uniqueness of reflected solutions of stochastic equations driven by symmetric stable processes" , University of Wisconsin-Madison, Department of Mathematics, September 2004
- "On a model for the term structure of interest rate processes of stable type", IMA Workshop "Financial Data Analysis and Applications", University of Minnesota, Minneapolis, May 2004
- "On solutions of one-dimensional stochastic differential equations driven by symmetric stable processes", University of Missouri-St. Louis, Department of Mathematics and Computer Science, April 2002
- "On solutions of one-dimensional stochastic differential equations driven by symmetric stable processes", Washington University in St. Louis, Department of Systems Science and Mathematics, January 2002
- "On stochastic differential equations with respect to stable Levy processes with arbitrary stability index", Technical University of Dresden (Germany), Institute of Mathematical Stochastics, December 2000
- "On stochastic differential equations driven by stable processes with reflecting boundaries", Friedrich-Schiller-University in Jena (Germany), Institute for Stochastics, October 2000
- "Stochastic equations driven by stable processes with arbitrary stability index", University of Halle-Wittenberg (Germany), Institute for Stochastics and Optimization, October 2000
- "Stable interest rate models", German Open Conference on Probability and Statistics, University of Hamburg, Germany, March 2000
- "The time change method for stochastic equations driven by symmetric stable processes", University of Kaiserslautern, Department of Mathematics, December 1999
- "On a model for the term structure of interest rate processes of stable type", 8th Symposium on Finance, Banking, and Insurance, Karlsruhe, Germany, December 1999
- "On stochastic differential equations via time change method", International Conference AMADE, Minsk, Belarus, September 1999
- "About the weak convergence of independent identically distributed random variables to the stable processes", Friedrich-Schiller-University in Jena (Germany), Institute for Stochastics, June 1999
- "On a model of the term structure of interest rate processes generalizing Schmidt model", 4th International Conference "Mathematical Modelling and Analysis", Vilnius, Lithuania, June 1999

- "On the interest rate models of stable type", Belarus State University, Department of Probability and Mathematical Statistics, April 1999
- "The Ito integral with respect to arbitrary stable motion and SDE's", Mathematical Institute of the Academy of Sciences of Belarus, Minsk, January 1999

Teaching Experience

- Intermediate Algebra
- Survey of Calculus (using a graphing calculator)
- Calculus I, II, III
- Elementary Probability Theory
- Linear Algebra and Geometry
- Applied Linear Algebra (for actuarial science students)
- Applied Statistics I (calculus based)
- Introductory Statistics (calculus not required)
- Probability and Statistics I (calculus not required)
- Linear Algebra
- Matrix Algebra
- Introduction to Differential Equations
- Discrete Structures
- Analysis I, II (calculus sequence with proofs)
- Random Variables and Stochastic Processes I, II (graduate courses, measure theory required)
- Probability Theory and Introduction to Stochastic Processes (undergraduate course for math students only, measure theory based, with proofs)
- Mathematical Statistics
- Applied Regression Analysis
- Design of Experiments
- Multivariate Statistical Analysis
- Operational Research (upper undergraduate level)
- A Course of Stochastic Processes (graduate level)
- Theory of Martingales (graduate level)

- Stochastic Integration and Introduction to Stochastic Analysis (graduate level)
- Elements of Queuing Theory (graduate level)
- Introduction to Actuarial Mathematics
- Mathematical Models of Risk Theory
- Discrete Models of Financial Mathematics (graduate level)
- Mathematics of Modern Engineering I (graduate course)
- Mathematics of Modern Engineering II (graduate course)

Major Research Interests

- stochastic analysis and ordinary SDEs
- Levy processes
- actuarial and financial mathematics

Grants

- NSF, RUI (Research at Undergraduate Institutions), in preparation
- NSF, Division Probability, #0806126, \$78,745 (pending)
- WiSys Technology Foundation, Release Time Grant, 2007, \$3,500
- DAAD (German Academic Exchange Service) grant, \$9,800, 2001
- INTAS grant for a research stay at the University of Jena, \$2,100, 2000
- DFG (German Research Council) grant for the participation at Winter School "Stochastic Processes", \$2,100, 2000
- Technical University of Dresden grant, \$900, 2000
- Travel grant of the University of Hamburg for the participation in "Stochastic Days 2000", \$1,000, 2000
- University of Kaiserslautern grant, \$500, 1999
- University of Karlsruhe grant for participation in 8th Symposium on Finance, Banking, and Insurance, \$1,450, 1999
- DAAD grant for a research stay at the University of Jena, \$2,100, 1999
- DAAD grant for a research stay at the University of Jena, \$2,100, 1998
- Volkswagen Research Fund grant, \$4,200, 1994

- DAAD (German Academic Exchange Service) grant for a research stay at Ruhr -University Bochum, \$21,580, 1993-1994

Professional Organizations

- American Mathematical Society (AMS)-current
- The Mathematical Association of America (MAA)-current
- American Association of University Professors (AAUP)

Additional Information

- Computing Skills: Word, LaTeX, Excel, SAS
- Languages: Belarussian (mother tongue), Russian, German, English
- Hobbies: hiking, spending time with family, soccer, geography
- Marital Status: Married, two daughters

List of Professional References

- 1. Prof. Hans-Juergen Engelbert**
Friedrich-Schiller-Universitaet Jena
Fakultaet fuer Mathematik und Informatik
Institut fuer Stochastik
Ernst-Abbe-Platz 1-4
D-07743 Jena, Germany
Phone: (+49-3641) 946-270
Fax: (+49-3641) 946-252
e-mail: engelbert@minet.uni-jena.de
- 2. Assoc. Prof. Henri Schurz**
Department of Mathematics, Southern Illinois University
1245 Lincoln Drive
Carbondale, IL 62901-4408, USA
Phone: (618) 453-6580
Fax: (618) 453-5300
e-mail: hschurz@math.siu.edu
- 3. Prof. Tian-You Hu**
Department of Natural and Applied Sciences
University of Wisconsin-Green Bay
2420 Nicolet Drive
ES 323
Green Bay, WI 54311
Phone: (920) 465-2173
Fax: (920) 465-2376
e-mail: hut@uwgb.edu
- 4. Prof. Sergei Rogosin**
Department of Mathematics and Mechanics
Belarus State University
F.Skoriny Avenue 4
220050 Minsk, Belarus
Phone: (+00375-17) 2066-495
e-mail: rogosin@bsu.by
- 5. Prof. Norman Katz**
Department of Systems Science and Mathematics
Washington University in St. Louis
Campus Box 1040
One Brookings Drive
St. Louis, MO 63130-4899
Phone: (314) 935-6001
Fax: (314) 935-6121
e-mail: katz@zach.wustl.edu
- 6. Prof. Prabhakar Rao**
Department of Mathematics and Computer Science

University of Missouri-St. Louis
8001 Natural Bridge Rd.
St. Louis, MO 63121
Phone: (314) 516-6347
Fax: (314) 516-5400
e-mail: rao@math.umsl.edu

7. Prof. Govindaswamy Chinnadurai

Institute of Molecular Virology
Saint Louis University
3681 Park Avenue
St. Louis, MO 63110
Phone: (314) 577-8416
Fax: (314) 577-8406
e-mail: Chinnag@slu.edu