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**Education**

1968 M.S. Probability and Statistics  
Moscow State (Lomonosov) University,

1972 Ph.D. Physical and Mathematical Sciences  
Moscow State (Lomonosov) University.

**Research Interests**

Stochastic processes and random fields, stochastic partial differential equations, nonlinear filtering and target tracking, uncertainty quantification, stochastic numerics, statistics of stochastic processes, stochastic fluid dynamics, mathematical modeling of high speed computer networks, financial mathematics.

## **Professional Experience**

- 2009- Ford Foundation Professor, Division of Applied Mathematics, Brown University
- 2007- Member of the Lefschetz Center for Dynamical Systems, Brown University
- 2006- Professor, Division of Applied Mathematics, Brown University
- 1991-2006 Professor, Department of Mathematics,  
University of Southern California
- 1992-2006 Director, Center for Applied Mathematical Sciences,  
University of Southern California
- 1995-98 Professor, Dept. of Electrical Engineering Systems (secondary  
appointment) University of Southern California
- 1989-91 Professor, Department of Mathematics  
The University of North Carolina at Charlotte
- 1988-89 Visiting Distinguished Professor, Department of Mathematics  
The University of North Carolina at Charlotte
- 1985-88 Full Professor, Department of Computer Science and Economic  
Mathematics. Moscow Institute for Advanced Studies for Chemistry  
Managers and Engineers, Moscow
- 1985-88 Scientific Head of the Laboratory of Informatics  
Moscow Institute for Advanced Studies for Chemistry Managers and  
Engineers, Moscow
- 1980-85 Associate Professor,  
Moscow Institute for Advanced Studies for Chemistry Managers and  
Engineers, Moscow
- 1971-80 Senior Lecturer, Moscow Institute for Advanced Studies for Chemistry  
Managers and Engineers, Moscow
- 1970-71 Junior Researcher, Moscow State (Lomonosov) University, Kolmogorov's  
Statistics Laboratory, Moscow

## **Ph.D. Students**

- M. Huebner (USC; 1993, Presently—Associate Professor, Michigan State).
- K. Owens (USC; 1994, Presently—Researcher, Jet Propulsion Laboratory, NASA).
- A. Fung (USC; 1995, Presently—Engineer, Tellab Systems, Los Angeles, CA).
- S. Lototsky (USC; 1996, Presently—Professor, USC)

C. Rao (USC; 1998, Presently—Senior Consultant, Optum, Costa Mesa, CA)  
S. Kligys (USC; 1998, Presently—Senior Engineer, Oracle, Los Angeles, CA)  
A. Petrov, (USC; 2000, Presently—Statistical Analyst, BioDiscovery, Inc., Marina Del Rey, CA ),  
G. Yaralov (USC; 2000 Presently—Senior Researcher, New Engine, Santa Monica, CA),  
A. Papanicolaou (Brown, 2010, Presently-Postdoctoral Fellow, Princeton),  
C.-Y. Lee (Brown, 2007-2010), Presently-Postdoctoral Fellow, SAMSI and UNC-Chappel Hill.

### **Post Doctoral Associates**

A. Figotin (UNCC, 1990, Presently—Professor, UCI, Irvine).  
R. Sowers (USC, 1991-1993, Presently—Assistant Professor, University of Illinois, Urbana-Champaign)  
S. Leonov (USC, 1996-1998, Presently—Researcher, SmithKline Beecham Pharmaceuticals, Collegeville, PA)  
S. Assing (USC, 2000, Presently—Lecturer, University of Edinburgh, UK)  
H. Kim (USC, 2000-2002, Presently—Assistant Professor, University of Korea, Seoul),  
J. Park (Brown University, 2009-2010),  
Ni Hao, (Brown University, 2012-2013).

### **Honors/Awards**

- Doctor of Physical and Mathematical Sciences, Vilnius State University, 1984,
- Institute of Mathematical Statistics, Fellow, 1997,
- International Academy of Natural and Social Sciences, Peter-the-Great Medal, 1997,
- Kolmogorov Centennial Conference, Kolmogorov Medal, 2003.
- Ford Foundation Professor of Applied Mathematics, Brown University, 2009.

## **Editorial Work**

*Journal “Stochastic Partial Differential Equations: Analysis and Computations”*.  
Springer, (2012-present, Editor-in Chief),  
*SIAM J. on Uncertainty Quantification* (2012-present, Associate Editor),  
*Bernoulli Journal* (2012-present, (2012-present, Associate Editor),  
*Stochastic Modeling and Applied Probability, Springer-Verlag* (2001-2012, Editor),  
*SIAM J. on Mathematical Analysis* (2001-2012 , Associate Editor)  
*Asymptotic Analysis* (2006-present, Member of Advisory Board)  
*Annals of Probability* (1997-2002, Associate Editor )  
*Electronic Journal of Probability* (1995-2002, Associate Editor)  
*Stochastic Processes and their Applications* (1996-1998, Associate Editor)

## **Professional Societies**

American Mathematical Society  
Institute of Mathematical Statistics  
Society for Industrial and Applied Mathematics  
Bernoulli Society

## **Invited Talks and Courses of Lectures (1990-2012)**

1. International Conference in Stochastic Partial Differential Equations, Trento, Italy, 1990.
2. 2nd World Congress of the Bernoulli Society for Mathematical Statistics, Uppsala, Sweden, 1990.
3. University of Paris VI, 1990.
4. University of Provence, Marseille, France, 1990, 1991.
5. U.S.-Russian Conference on MHD Stability and Dynamos, University of Chicago, Chicago, IL, 1992.
6. Workshop on White Noise Models and Stochastic Systems, Twente, The Netherlands, 1992.
7. Workshop on Stochastic Control, Montreal, Canada, 1992.
8. ONR Workshops. Random Fields for Oceanographic Modeling, Washington, D.C., 1990; Santa Barbara, CA, 1991; Miami, FL, 1992.
9. 10th Annual Joint Summer Research Conferences in the Mathematical Sciences, Control and Identification of Partial Differential Equations, Mount Holyoke College, South Hadley, MA, 1992.
10. Conference on Stochastic Partial Differential Equations, Rochester, NY, 1992.
11. Workshop on Stochastic PDE and Superprocesses (AMS Direction in Probability Workshops), Medford, MA, 1992.
12. University of Minnesota, Minneapolis, MN, 1992.

13. 4th International Conference on Advances in Communication and Control Rhodes, Greece, 1993.
14. AMS Summer Institute, Stochastic Analysis, Ithaca, NY, 1993.
15. Southern California Annual Conference in Probability and Statistics, Los Angeles, CA, 1993.
16. Sixth Annual Copper Mountain Conference on Multigrid Methods (session organizer), Copper Mountain, CO, 1993.
17. ONR Workshop on Random Fields for Oceanographic Modeling (organizer), Los Angeles, CA, 1993.
18. USC-Hughes Workshop on Stochastic Modeling and Simulation (organizer), Los Angeles, CA, 1993.
19. Naval Ocean Systems Center, San Diego, CA, 1993.
20. International conference, "Stochastic Partial Differential Equations and Random Media," Marseille, France, 1994.
21. Fourth Eugene Lukas Symposium, Bowling Green, OH, 1994.
22. Hughes-USC Workshop on Stochastic Modeling and Simulation in Material Science, Los Angeles, CA, 1994.
23. Southern California Conference on PDE's and Analysis, Los Angeles, CA, 1994.
24. U.S.-Japan Bilateral Seminar on Stochastic Analysis in Infinite Dimensional Spaces, University of Louisiana, New Orleans, LA, 1994.
25. Workshop in Nonlinear Filtering, Chapel Hill, NC, 1994.
26. 3rd World Congress of the Bernoulli Society, Chapel Hill, NC, 1994.
27. 1994 SIAM Annual Meeting, San Diego, CA, 1994.
28. 1994 ONR Workshop on Random Fields, Santa Barbara, CA, 1994.
29. University of Minnesota, Minneapolis, MN, 1995.
30. American Mathematical Society--Israel Mathematical Union, Joint Meeting, 1995.
31. Technion, Haifa, Israel, 1995.
32. University of Tel Aviv, Israel, 1995.
33. Third IEEE Mediteranean Symposium on New Directions in Control and Automation, Limasol, Cyprus, 1995.
34. Joint Meeting of Southern California Sections of MAA and SIAM, San Diego, CA, 1996.
35. Fourth World Congress of Bernoulli Society, Vienna, Austria, 1996.
36. International Workshop on Computational and Statistical Issues for Stochastic Processes, Cremona, Italy, 1996.
37. Conference on Stochastic Analysis, Random Fields and Applications, Ascona, Switzerland, 1996.
38. 1996 SIAM Annual Meeting, Kansas City, MO, 1996.
39. Workshop on Stochastic Control and Nonlinear Filtering, North Carolina State University, Charlotte, NC, 1996.
40. 36th IEEE Conference on Decision and Control, Kobe, Japan, 1996
41. Some Problems of Stochastic Analysis, Workshop, Michigan State University, East Lansing, MI, 1996.
42. Topics on Stochastic Control, Workshop, Osaka University, Osaka, Japan, 1996.

43. Instructional Conference on Stochastic Partial Differential Equations, Edinburgh, UK, 1997.
44. Imperial College, London, UK, 1997.
45. University of Chicago, Chicago, IL, 1997.
46. Stanford University, Stanford, CA, 1997.
47. University of California, San Diego, CA, 1997
48. MSRI Mini-course of Lectures: “SPDE’s and Nonlinear Filtering” at the NSF Mathematical Research Institute, Berkeley, CA, 1997.
49. Symposium on Stochastic Control and Nonlinear Filtering, Los Angeles, CA, 1997.
50. American Mathematical Society Spring Western Section Meeting, Davis, CA, 1998.
51. Scuola Normale Superiore, Pisa, Italy, 1998.
52. University “La Sapienza,” Rome, Italy, 1998.
53. IEEE 6<sup>th</sup> Mediterranean Conference on Estimation and Control, Alghero, Italy, 1998
54. Workshop on Industrial Mathematics, Northeastern University, Boston, MA, 1998.
55. 36<sup>th</sup> Allerton Conference on Communication, Control, and Computing, University of Illinois, Urbana-Champaign, IL, 1998.
56. 4<sup>th</sup> US Army Conference on Applied Statistics, El Paso, Texas, 1998.
57. Irving S. Reed Symposium, USC, Los Angeles, CA, 1999.
58. 2<sup>nd</sup> ONR/GTRI Workshop on Target Tracking and Sensor Fusion, Georgia Tech Research Institute, Atlanta, GA, 1999.
59. SPIE 44<sup>th</sup> Annual Meeting, Denver, CO, 1999.
60. 3<sup>rd</sup> Seminar on Stochastic Analysis, Random Fields and Applications, Ascona, Switzerland, 1999.
61. UCLA, Los Angeles, CA, 1999.
62. Stanford University, Stanford, CA, 2000.
63. Princeton University, Princeton, NJ, 2000.
64. Conference on Stochastic partial Differential Equations and Applications, Trento, Italy, 2000.
65. IMA Workshop, “Modeling and analysis of Noise in Integrated Circuits and Systems” (organizer), Minneapolis, MN, 2000.
66. 39<sup>th</sup> IEEE Conference on Decision and Control, Sydney, Australia, 2000.
67. Workshop on Stochastic Partial Differential Equations: Statistical Issues and Applications, Center for Mathematical Physics and Stochastics, Copenhagen, Denmark, 2001.
68. Conference on Stochastic Analysis: Geometric Aspects and Applications, Eurandom, Eindhoven, The Netherlands, 2001.
69. Workshop on Computational Stochastic Differential Equations, Warwick University, UK, 2001.
70. Conference on Partial Differential Equations and Probability (organizer), University of Minnesota, Minneapolis, MN, 2001.
71. 33<sup>rd</sup> Symposium on the Interface: Computing Science and Statistics, Costa Mesa, CA, 2001.

72. 5<sup>th</sup> SIAM Meeting on Control and Applications, San Diego, CA, 2001.
73. Northwestern University, Evanston, IL, 2001
74. 1<sup>st</sup> Southern California Applied Mathematics Symposium (organizer), Caltech, Pasadena, CA, 2001.
75. Warwick Symposium on Stochastic Partial Differential Equations, Warwick, UK, 2001.
76. Mini-course of Lectures: “Stochastic Fluid Mechanics,” Mathematics Research Center, Warwick University, Warwick, UK, 2001.
77. Southern California Annual Conference in Probability and Statistics, Irvine, CA, 2001.
78. 2<sup>nd</sup> Southern California Applied Mathematics Symposium (organizer), IPAM, Los Angeles, CA, 2002.
79. Joint Meeting of AMS and Unione Matematica Italiana, Pisa, Italy, 2002.
80. 8<sup>th</sup> International Vilnius Conference on Probability Theory and Mathematical Statistics (organizer), Vilnius, Lithuania, 2002.
81. Caltech, 2002.
82. University of California, San Diego, 2003.
83. University of California, Irvine, 2003.
84. Interface 2003 Conference, Salt Lake City, Utah, 2003.
85. Conference on Stochastic Partial Differential Equations, IAS, Princeton, 2003
86. Workshop on Probability and Partial Differential Equations in Modern Applied Mathematics, IMA, Minneapolis, 2003.
87. International Conference “Kolmogorov and Contemporary Mathematics”, Moscow, Russia, 2003 (plenary lecture).
88. Workshop on Stochastic Partial Differential Equations, BIRS, Banff, Canada, 2003.
89. International Conference on Stochastic Partial Differential Equations, Levico, Italy, 2004.
90. Caltech, 2004.
91. University of Minnesota, 2004, 2 Lectures.
92. Centro di Ricerca Matematica Ennio De Giorgi, Italy, 2004.
93. Mini-course of lectures “Stochastic Fluid Dynamics”, Institut de Matematica, University of Barcelona, 2004
94. Workshop “Stochastics in Fluid Models”, ETH, Zurich, 2005
95. Workshop “Deterministic and Stochastic Navier-Stokes Equations”, American Institute of Mathematics, Palo Alto, 2005
96. 2nd Bachelier Colloquium on Stochastic Analysis and Mathematical Finance, Metabief, France, 2005.
97. Workshop “Stochastic Flows”, CIRM (Lumigny), France, 2005.
98. 7<sup>th</sup> Workshop on Stochastic Numerics, RIMS, Kyoto University, 2005.
99. University of Osaka, 2005.
100. Mathematical Encounters XXIX, University of Madeira, 2005.
101. 5<sup>th</sup> Southern California Conference on Applied Mathematics, USC, Los Angeles, 2005 (organizer).
102. Analytical and Stochastic Fluid Dynamics Workshop, MSRI (Berkeley), 2005 (co-organizer).

103. Geophysical Fluid Dynamics Workshop, American Institute of Mathematic, Palo Alto, 2006 (co-organizer).
104. University of California, Irvine, 2006.
105. UCLA, 2006.
106. Mini-course on Stochastic PDE, University of Utah, 2006.
107. Conference on Asymptotic Analysis in Stochastic Processes, Wayne State University, 2006.
108. SPDE Workshop on Advances and Challenges in the Solution of Stochastic Partial Differential Equations, Brown University, 2006 (co-organizer).
109. 96<sup>th</sup> Statistical Mechanics Conference, Rutgers University, 2006.
110. Rensselaer Polytechnic Institute, 2007
111. Stanford University, 2007.
112. Princeton University, 2007.
113. Columbia University, 2007.
114. Conference on Stochastic PDEs, Cornell University, 2007.
115. Conference “Stochastic Partial Differential Equations and Applications”, Mittag-Leffler Institute, Sweden, 2007
116. Workshop on Nonlinear Filtering and Control, Warwick University, UK, 2007
117. Mini-Conference on Stochastic Analysis, Brown University, 2007 (organizer).
118. International Conference on Stochastic Partial Differential Equations, Levico, Italy, 2008.
119. University of Kansas (Lawrence), 2008.
120. University of Michigan (Ann Arbor), 2008.
121. Workshop on Stochastic PDEs and Numerical Analysis, Zurich, 2008.
122. “Stochastic Analysis and Applications: from Mathematical Physics to Mathematical Finance”, Conference, Princeton University, 2008
123. 8<sup>th</sup> World Congress on Computational Mechanics, Venice, Italy, 2008
124. London Mathematical Society Short Course of Lectures on Stochastic PDEs, Imperial College, London, 2008.
125. SIAM conference on Computational Science and Engineering, Miami, 2009
126. 7<sup>th</sup> ISAAC Congress, London, 2009.
127. International Conference on Spectral and High Order Methods, 2009, Trondheim, Norway.
128. Workshop on Stochastic Multiscale Methods: Mathematical Analysis and Algorithms, University of Southern California, Los Angeles, 2009.
129. Princeton University, 2009.
130. SIAM conference on Analysis of Partial Differential Equations, Miami, 2009
131. Georgia Institute of Technology, Atlanta, 2010.
132. Louisiana State University, Baton Rouge, 2010
133. Conference on SPDEs, York University, UK, 2010
134. Semester on Stochastic PDEs, Isaac Newton Institute, Cambridge, 2010
135. 7<sup>th</sup> Workshop on Stochastic Analysis on Large Scale Interacting Systems, Tokyo, Japan.
136. Workshop on Mathematical Finance and Related Issues, Kyoto, Japan
137. 34<sup>th</sup> Conference on Stochastic Processes and Applications, Osaka, Japan.
138. NSF Institute for Pure and Applied Mathematics, Invited lecture “Stochastic Fluid Dynamics”, January 2011
139. Conference on Malliavin Calculus and Stochastic Analysis, University of Kansas, Invited talk on Stochastic Fluids and Malliavin Calculus, March 2011.



140. Workshop on SPDEs, Archimedes Center for Modeling, Analysis, and Computations, Heraklion, Greece, Invited lecture: “On Unbiased Stochastic Navier-Stokes Equation”, June 2011.
141. Imperial College, London. Invited lecture: “Recent Advances in Nonlinear Filtering”, June 2011
142. Oxford University, Invited lecture: “Stochastic Fluid Dynamics and Malliavin Calculus”
143. ICIAM 2011, Vancouver, Canada, Presentation: “Uncertainty Quantification and Nonlinear Filtering”
144. ICIAM 2011, Vancouver, Canada, Presentation: “On Unbiased Stochastic Navier-Stokes Equation”
145. Uncertainty Quantification, NSF Institute for Computational and Experimental Mathematics, Providence, RI, Semester Organizer
146. American Mathematical Society Meeting, Lawrence, Kansas, March 2012, Invited Talk.
147. University of Maryland, Department of Mathematics, Invited Talk, April, 2012
148. Workshop “Stochastic Analysis and Applications”, EPFL, Centre Interfacultaire Bernoulli, Lausanne, June 4-8, 2012, Invited Talk.
149. Centre Interfacultaire Bernoulli, EPFL, Switzerland, Working group on SPDEs: June 5-12 2012, Invited Talk.

## **Publications**

### **Books and Edited Volumes**

#### ***a. Books:***

1. *Stochastic Partial Differential Equations* (with S. Lototsky), Springer (to appear).
2. *Stochastic Navier-Stokes Equation. Modeling and Analysis* (with R. Mikulevicius), Springer (to appear).
3. *Stochastic evolution systems. Linear theory and applications to the statistics of random processes* (in Russian). Moscow: “Nauka,” 1983.
4. *Data analysis in chemical research. Statistical foundations* (in Russian), Moscow: “Khimija,” 1984.

5. *Stochastic evolution systems. Linear theory with applications to non-linear filtering.* Mathematics and its Applications (Soviet Series) 35. Dordrecht: Kluwer Academic Publishers, 1990.

***b. Edited Volumes:***

1. The Oxford Handbook on Nonlinear Filtering (with D. Crisan), Oxford University Press, 2011.
2. *Applied Mathematics & Optimization. Special issue on Approximation in Stochastic Partial Differential Equations*, (Guest Ed. B. Rozovskii), Springer, 2006.
3. *Stochastic partial differential equations: six perspectives.* (Ed. R. Carmona and B. L. Rozovskii) Mathematical Surveys and Monographs Series 64. Providence, RI: American Mathematical Society, 1998.
4. *Statistics and control of stochastic processes. The Liptser festschrift: papers from the Steklov Seminar (Moscow, 1995/1996).* Ed. Yu. M. Kabanov, B. L. Rozovskii, and A. N. Shiryaev. River Edge, NJ: World Scientific, 1997.
- 5.
6. *Stochastic modeling in oceanography.* Ed. R. Adler, P. Muller, and B. L. Rozovskii. Progress in Probability 39. Boston: Birkhauser, 1996.
7. *Stochastic partial differential equations and their applications. Proceedings of the IFIP WG 7/1 International Conference (Charlotte, NC, 1991).* Ed. B. L. Rozovskii and R. B. Sowers. Lecture Notes in Control and Information Sci. 176. Berlin: Springer-Verlag, 1992.

**Papers** (in refereed journals/books)

1. On Generalized Malliavin Calculus, *J. Stochastic Analyses and Applications* (with S. Lototsky and D. Selesi), 122 (2012), pp 808-843.
2. On unbiased stochastic Navier-Stokes equation (with R. Mikulevicius), *Probab. Theory Related Fields*, 154 (2012), pp. 787-834.
3. A multi-stage Wiener chaos expansion method for stochastic advection-diffusion-reaction equations (with Z. Zhang, M.V., Tretyakov and G. Karniadakis), *SIAM J. Sci. Comp.* V. 34, No 2, pp. A914-A936.
4. Efficient Nonlinear Filtering of a Singularly Perturbed Stochastic Hybrid System (with J. Park and R. Sowers), *London Math. Society J. of Mathematics and Computation* (submitted), 2010.
5. Elliptic equations of higher stochastic order (with S. Lototsky and X. Wan), *ESAIM: Math. Modeling and Numerical Anal.*, 44 (2010) no. 5, 1135-1153
6. A stochastic finite element method for stochastic parabolic equations driven by purely spatial noise (with C.-Y. Lee) *Communications on Stochastic Analysis*, **4**, (2010), no. 2, 271-297.
7. Randomization of forcing in large systems of PDE for improvement of energy estimates (with C.-Y. Lee and H. M. Zhou) *SIAM J. Multiscale Modeling and Simulation*, **8** (2010), no. 4, 1419-1438.
8. A new stochastic modeling methodology based on weighted Wiener chaos and Malliavin calculus, (with G. Karniadakis and X. Wan), *Proc. Natl. Acad. Sc. USA*, **106** ( 2009), no. 34, 14189-14104.
9. A unified approach to stochastic evolution equations using the Skorokhod integral, (with S. Lototsky), *Probability Theory and Appl.*, **54** , no. 2, 2009.
10. Stochastic differential equations driven by purely spatial noise, (with S. Lototsky), *SIAM Journal on Mathematical Analysis*, **41**, no.4, 1295-1322, 2009.
11. Stochastic parabolic equations of full second order (with S. Lototsky). Book chapter in "*Topics in Stochastic Analysis and Nonparametric Estimation* " (Ed. P.- L. Chow et al.). 199--210, *The IMA Volumes in Mathematics and its Applications*, Springer, 2007.
12. Wiener chaos solutions of linear stochastic evolution equations (with S. Lototsky). *Annals. of Prob.*, **34** (2006), no. 2, 638--662.

13. Wiener chaos expansions and numerical solutions of randomly forced equations of fluid mechanics (with T. How et al.), *J. Comput. Phys.* **216** (2006), no. 2, 687--706.
14. Stochastic differential equations: A Wiener chaos approach (with S. Lototsky). Book chapter in "*From Stochastic Calculus to Mathematical Finance*" (Ed. Y. Kabanov et al.). 433--506, Springer, Berlin, 2006
15. Strong solutions of stochastic generalized porous media equations: Existence, uniqueness and ergodicity. (with G. Da Prato et al.) *Comm. Partial Dif. Eq.*, **31** (2006), no. 1-3, 277--291.
16. A novel approach to detection of intrusions in computer networks via adaptive sequential and batch-sequential change-point detection methods (with R. Blazek et al.), *IEEE Transactions on Signal Processing*, **54**, (2006) no. 9, 3372--3382.
17. Detection of intrusions in information systems by sequential change-point methods (with A. Tartakovsky et al.). *Statistical Methodology*, **3** (2006), no. 3, 252--293.
18. Detection of intrusions in information systems by sequential change-point methods. Authors' response (with A. Tartakovsky et al. *Stat. Methodol.* **3** (2006), no. 3, 329--340
19. A filtering approach to tracking volatility from prices observed at random times (with J. Cvitanic et al). *Annals of Applied Prob*, **16** (2006), no. 3, 1633—1652
20. Numerical estimation of volatility values from discretely observed diffusion data. (with J. Cvitanic and Il. Zalyapin) *J. Comp. Finance*, **9** (2006), no. 4,1-36
21. Global  $L_2$ -solutions of stochastic Navier-Stokes equations (with R. Mikulevicius). *Annals of Prob.*, **33** (2005), No. 1, 137-176
22. A nonparametric multichart CUSUM test for rapid detection of DOS attacks in computer networks." *International Journal of Computing and Information Science*, **2** (2004), no. 3, 149--158.
23. Passive Scalar Equation in a Turbulent Incompressible Gaussian Velocity Field (with S. Lototsky), *Russian. Math. Surveys.* **59** (2004), No.2, 297--312
24. Stochastic Navier-Stokes equations for turbulent flows (with R. Mikulevicius). *SIAM J. Math. Anal.* **35** (2004), No. 5, 1250-1310.

25. A diffusion model of roundtrip time (with S. Bohacek). *Computational Statistics and Data Analysis, Computational Statistics and Data Analysis*, vol. **45** (2004) no. 1, 25-50.
26. On martingale problem solutions for stochastic Navier-Stokes equations (with R. Mikulevicius). In *Stochastic partial differential equations and applications*, ed. G. Da Prato and L. Tubaro. Lecture Notes in Pure and Applied Mathematics Series 227. New York: Marcel Dekker, 2002.
27. A note on Krylov's  $L_p$ -theory for systems of SPDEs (with R. Mikulevicius). *Electron. J. Probab.* **6**, no. 12 (2001): 1•35.
28. On equations of stochastic fluid mechanics (with R. Mikulevicius). In *Stochastics in finite and infinite dimensions: in honor of Gopinath Kallianpur*, ed. T. Hida et al., 285•302. Trends Math. Boston: Birkhauser, 2001.
29. Stochastic Navier-Stokes equations: propagation of chaos and statistical moments (with R. Mikulevicius). In *Optimal control and partial differential equations: in honor of Professor Alain Bensoussan*, ed. J. L. Menaldi et al., 258•267. Amsterdam: IOS Press, 2001.
30. Approximation of the Kushner equation of nonlinear filtering (with K. Ito). *SIAM J. Control Optim.* **38**, no. 3 (2000): 893•915.
31. Parameter estimation for stochastic evolution equations with non-commuting operators (with S. Lototsky). In *Skorokhod's ideas in probability theory*, ed. V. Korolyuk, N. Portenko, and H. Syta, 271•280. Kiev: Institute of Mathematics of the National Academy of Sciences of Ukraine, 2000.
32. Fourier-Hermite expansions for nonlinear filtering (with R. Mikulevicius). *Teor. Veroyatnost. i Primenen.* **44**, no. 3 (1999): 675•680. Translation in *Theory Probab. Appl.* **44**, no. 3 (2000): 606•612.
33. Spectral asymptotics of some functionals arising in statistical inference for SPDE's (with S. Lototsky). *Stochastic Process. Appl.* **79**, no. 1 (1999): 69•94.
34. Recursive nonlinear filter for a continuous-discrete time model (with S. Lototsky). *IEEE Trans. Automatic Cont.* **48**, no. 8 (1998): 1154•58.
35. Martingale problems for stochastic PDE's (with R. Mikulevicius). In *Stochastic partial differential equations: six perspectives*, ed. R. Carmona and B. L. Rozovskii, 243•325. Mathematical Surveys and Monographs Series 64. Providence, RI: American Mathematical Society, 1998.

36. Normalized stochastic integrals in topological vector spaces (with R. Mikulevicius). In *Séminaire de Probabilités XXXII*, 137•165. Lecture Notes in Math. **1686**. Berlin: Springer-Verlag, 1998.
37. Linear parabolic stochastic PDE's and Wiener chaos (with R. Mikulevicius). *SIAM J. Math. Anal.* **29**, no. 2 (1998): 452•480.
38. Weighted stochastic Sobolev spaces and bilinear SPDE's driven by space-time white noise (with D. Nualart). *J. Funct. Anal.* **149**, no. 1 (1997): 200•225.
39. On asymptotic problems of parameter estimation in stochastic PDE's: discrete time sampling (with L. Piterbarg). *Math. Methods Statist.* **6**, no. 2 (1997): 200•223.
40. Nonlinear filtering revisited: a spectral approach (with S. Lototsky and R. Mikulevicius). *SIAM J. Control Optim.* **35**, no. 2 (1997): 435•461.
41. On asymptotic properties of an approximate maximum likelihood estimator for stochastic PDEs (with M. Huebner and S. Lototsky). In *Statistics and control of stochastic processes. The Liptser festschrift: papers from the Steklov Seminar (Moscow, 1995/1996)*, ed. Yu. M. Kabanov, B. L. Rozovskii, and A. N. Shiryaev, 139•155. River Edge, NJ: World Scientific, 1997.
42. Recursive multiple Wiener integral expansion for nonlinear filtering of diffusion processes (with S. Lototsky). In *Stochastic processes and functional analysis*, ed. J. Goldstein et al., 199•208. Lecture Notes in Pure and App. Math **186**. New York: Marcel Dekker, 1997.
43. Maximum likelihood estimators in the equations of physical oceanography (with L. Piterbarg). In *Stochastic modelling in oceanography*, ed. R. Adler et al., 397•421. Progress in Probability **39**. Boston: Birkhauser, 1996.
44. On asymptotic properties of maximum likelihood estimators for parabolic stochastic PDE's (with M. Huebner). *Probab. Theory Related Fields* **103**, no. 2 (1995): 143•163.
45. On stochastic integrals in topological vector spaces (with R. Mikulevicius). *Stochastic analysis (Ithaca, NY, 1993)*, 593•602. Proc. Sympos. Pure Math. **57**. Providence, RI: American Mathematics Society, 1995.
46. Estimates of turbulent parameters from Lagrangian data using a stochastic particle model (with A. Griffa et al.). *Journal of Mar. Res.* **53**, no. 3 (1995): 371•401.
47. Statistics and physical oceanography (with A. Griffa et al.). *Stat. Sci.* **9**, no. 2 (1994): 167•201.

48. Uniqueness and absolute continuity of weak solutions for parabolic SPDE's (with R. Mikulevicius). *Acta Appl. Math.* **35**, no. 1-2 (1994): 179•192.
49. Soft solutions of linear parabolic SPDE's and the Wiener chaos expansion (with R. Mikulevicius). In *Stochastic analysis on infinite-dimensional spaces*, ed. H. Kunita and H.-H. Kuo, 211•220. Pitman Res. Notes Math. Ser. **310**. Baton Rouge, LA: Longman Sci. Tech, Harlow, 1994.
50. Kinematic dynamo and intermittence in a turbulent flow. Magnetohydrodynamic stability and dynamos (with P. Baxendale). *Geophys. Astrophys. Fluid Dynam.* **73**, no. 1-4 (1993): 33•60.
51. Two examples of parameter estimation for stochastic partial differential equations (with M. Huebner and R. Khasminskii). In *Stochastic processes. A festschrift in honor of Gopinath Kallianpur*, 149•160. New York: Springer-Verlag, 1993.
52. Some results on a diffusion approximation to the induction equation. In *Stochastic partial differential equations and applications (Trento, 1990)*, ed. G. Da Prato and L. Tubaro, 268•81. Pitman Res. Notes in Math. Ser. **268**. Baton Rouge, LA: Longman Sci. Tech, Harlow, 1992.
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