

CURRICULUM VITAE



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Education:

- 1975 – 1980** Ivane Javakhishvili Tbilisi State University (TSU), Faculty of Mathematics and Mechanics
June, 1980 University Diploma in Mathematics, Ivane Javakhishvili Tbilisi State University
1980 – 1984 Post Graduate student of Tbilisi State University and Moscow State University
December, 1984 Ph.D. in Probability Theory and Mathematical Statistics, Moscow State University

Professional activities:

- 2018 --** TSU, Faculty of Exact and Natural Sciences, Professor
2017 -- TSU, Faculty of Exact and Natural Sciences, Chief specialist at the Office of Academic Process Management
2012 -- TSU, Faculty of Exact and Natural Sciences, Head of Department of Mathematics
2009 -- 2017 TSU, Faculty of Exact and Natural Sciences, Senior specialist at the Office of Academic Process Management and Scientific Researches
2006 -- 2018 TSU, Faculty of Exact and Natural Sciences, Associate professor
2006 -- 2007 TSU, Chief of Educational-Scientific Mathematical Institute
2000 – 2007,
2017 -- Senior staff scientist of A. Razmadze Mathematical Institute
1990 -- 2006 TSU, Senior staff scientist Laboratory of stochastic analysis and statistical decisions
1985 – 2000,
2007 -- 2017 Staff scientist of A. Razmadze Mathematical Institute

Teaching Courses:

For bachelors: Probability Theory; Probability Theory and Mathematical Statistics for Economists; Bases of the theory of stochastic processes; Bases of the Martingale Theory; Statistics for sociologists and psychologists.

For undergraduates: Probability, Statistics, Stochastic Processes; Stochastic Analysis; The Malliavin Calculus; Theory of Stochastic Differential Equations; Mathematical Statistics for Economists.

For graduate students: Statistical Methods of Researches; Applied Statistics; Stochastic Analysis.

Research Interests

The Cauchy problem for second order stochastic parabolic equation. The filtering problem of multidimensional diffusion processes. Stochastic Differential equations. The stochastic anticipative and nonanticipative analysis. Malliavin Calculus. Martingale Representation Theorems. Stochastic Financial Mathematics. Hedging problem of European Options.

Scientific leadership and evaluation

- 1990 -- 2016** The head of 10 undergraduates who received a master's degree in mathematics at the TSU
2005 -- 2009 Supervisor of the post-graduate student, who became PhD in mathematics at the TSU
2010 -- 2017 Scientific evaluation of the 5 dissertation work
2017 -- Head of the Master's program in Applied Mathematics

Scientific Projects

- 2018 -- 2021** Project CPEA-LT-2016/10003 (grant #1649): "Advanced Collaborative Program for Research Based Education on Risk Management in Industry and Services under Global Economic, Technological and Environmental Changes: Enhanced Edition", Co-head of the project
2017 -- 2021 Shota Rustaveli National Science Foundation and German Volkswagen Foundation Joint Grant # 175: "International Doctoral Program in Mathematics at Tbilisi State University", Key personnel (<http://www.mathphd.tsu.ge/pages/programperson.html>)
2013 -- 2016 Shota Rustaveli National Science Foundation, Georgia, no. FR/308/5-104/12, Manager and Key personnel
2013 -- 2015 Shota Rustaveli National Science Foundation, Georgia, no. FR/69/5-104/12, Key Personnel
2009 -- 2011 Georgian National Scientific Foundation, Grant no. 09-383-3-106, Manager and Key personnel
2009 -- 2011 Georgian National Scientific Foundation, Grant no. 09-471- 3-104, Key personnel
2006 -- 2009 Georgian National Scientific Foundation, Grant no. 337/07, 06-223-3-104, Coordinator and Key personnel
2005 -- 2006 Research Grant of Georgian Ministry of Education and Science, no. 37, Key personnel
2004 -- 2005 Research Grant of Georgian National Academy of Sciences, no. 1.10.04, Key personnel
2003 -- 2004 Research Grant of Georgian National Academy of Sciences, no. 1.10.03, Key personnel
2002 -- 2003 Research Grant of Georgian National Academy of Sciences, no. 1.10.02, Key personnel
2001 -- 2002 Research Grant of Georgian National Academy of Sciences, no. 1.10.01, Key personnel
2000 -- 2001 Research Grant of Georgian National Academy of Sciences, no. 1.10.00, Key personnel
1997 -- 1999 Project of INTAS, Grant no. 97-30204, Key personnel
1996 -- 1997 Project of Eurasia Foundation, Grant no. C 96-0030, Key personnel

Membership of the organization / association

- 2017 --** Member of the National Committee of the Georgian Mathematical Union
2017 -- Deputy Editor-in-chief of the scientific-popular journal "Mathematics"
2016 -- Member of the Mathematical Dissertation Board of Georgian Technical University
2016 -- Member of Editorial Board of Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics
2016 -- 2017 TSU, Member of the Academic Council
2015 -- Vice-president of the Georgian Statistical Association
2012 -- Board member of the Georgian Mathematical Union
2011 -- Board member of the Georgian Statistical Association
2010 -- 2017 Accreditation Expert of the National Center for Educational Quality Enhancement of Georgia
1991 -- Member of the Georgian Statistical Association (GSA)
1990 -- Member of the Georgian Mathematical Union (GMU)
1986 -- Member of the Bernoulli's International Society

Certificate and Awards

- 01.10.1978--30.10.1980** I.Chavchavadze State Institute of Foreign Languages Two year courses (English language). Certificate # 223, 20.11.1980;
29.02.2008--03.03.2008 Trainers Training (ctc Empowering People for Change). Certificate supported by Coradid Netherlands;

2009 -- 2010 Trainer of Georgian Association of Teachers;
2012 Award of honor of the president

 **Participation in International Conferences (Last 10 years)**

- 2018** The 6th International Scientific Conference "Mathematical Modeling, Optimization and Information Technologies (MMOTI- 2018)", Chisinau, Moldova, November 12-16, 2018.
- 2018** International Conference «Stochastic Equations, Limit Theorems and Statistics of Stochastic Processes», dedicated to the 100th anniversary of I.I.Gikhman, Kyiv, Ukraine, September 17-23, 2018.
- 2018** International Conference on Probability Theory and Mathematical Statistics Dedicated to 100th Anniversary of Professor Gvanji Mania, Tbilisi, Georgia, July 15-19, 2018.
- 2018** IX International Conference of the Georgian Mathematical Union, Batumi, Georgia, September 3-8, 2018.
- 2018** Norwegian-Georgian-Moldavian-Ukrainian Summer School on Quantitative Risk Management. Batumi, Georgia, October 1-15, 2018.
- 2018** XXXII International Enlarged Sessions of the Seminar of Ilia Vekua Institute of Applied Mathematics. Tbilisi, Georgia, April 18-20, 2018.
- 2017** International Conference in Functional Analysis dedicated to the 125th anniversary of Stefan Banach, Lviv, Ukraine, September 18-23, 2017.
- 2017** Mathematical Institute of Georg August University of Gottingen, Gottingen, Germany, 26.02 - 04.03.17.
- 2017** 8th International Conference of Georgian Mathematical Union. Batumi, Georgia, September 4-8, 2017
- 2017** 31st International Enlarged Sessions of the Seminar of Ilia Vekua Institute of Applied Mathematics. Tbilisi, Georgia, April 19-21, 2017
- 2016** 7th International Joint Conference of the Georgian Mathematical Union & Georgian Mechanical Union. Batumi, Georgia, September 4-9, 2016
- 2015** International Conference on Probability Theory and Statistics. Tbilisi, Georgia, September 7-12, 2015
- 2015** The First SDSU – Georgia STEM WORKSHOP on Nanotechnology and Environmental Sciences. Tbilisi, Georgia, September 4-5, 2015
- 2015** 6th International Conference of Georgian Mathematical Union. Batumi, Georgia, July 12-16, 2015
- 2015** International Conference “Probability, Reliability and Stochastic Optimization” (PRESTO-2015). Kyiv, Ukraine, April 7-11, 2015
- 2014** 5th International Conference of Georgian Mathematical Union. Batumi, Georgia, September 8-12, 2014
- 2014** Caucasian Mathematics Conference CMC I. Tbilisi, Georgia, September 5-6, 2014
- 2013** 21st International Conference "Problems of Management of Safety of Difficult Systems". Moscow, Russia, December 17-19, 2013
- 2013** 4th International Conference of Georgian Mathematical Union. Batumi, Georgia, September 9-15, 2013
- 2013** International Conference: ”Modern Problems in Applied Mathematics”, TSU-95 & VAM-45. Tbilisi, Georgia, September 4-7, 2013
- 2012** 20th International Conference "Problems of Management of Safety of Difficult Systems". Moscow, Russia, December 19-21, 2012
- 2012** 3rd International Conference of Georgian Mathematical Union. Batumi, Georgia, September 2-9, 2012
- 2012** 4th International Conference “Problems of Cybernetics and Informatics”. PCI’2012. Baku, Azerbaijan, September 12-14, 2012
- 2011** 19th International Conference "Problems of Management of Safety of Difficult Systems". Moscow, Russia, December 21-23, 2011

- 2011 2nd International Conference of Georgian Mathematical Union. Batumi, Georgia, September 15-19, 2011
- 2011 International Conference: "Continuum Mechanics and Related Problems of Analysis" dedicated to the Anniversary Georgian National Academy of Sci. and the 120 Birthday of N. Muskhelishvili. Tbilisi, Georgia, September 9-14, 2011
- 2011 58th World Statistics Congress of the International Statistical Institute. Dublin, Ireland, August 21-26, 2011
- 2011 International Conference: Problems of Modern Mathematics (MMP'2011). Karshi, Uzbekistan, April 22-23, 2011
- 2011 20th International conference of "Problem of management of safety of difficult systems". Moscow, Russia, December 21-23, 2011
- 2010 18th International Conference "Problems of Management of Safety of Difficult Systems". Moscow, Russia, December 19-21, 2010
- 2010 International Conference Modern Stochastics: Theory and Applications II. Kyiv, Ukraine, September 7-11, 2010
- 2010 The Third International Conference "Problems of Cybernetics and Informatics". PCI'2010. Baku, Azerbaijan, September 6-9, 2010
- 2009 International Conference "Stochastic Analysis and Random Dynamical Systems". Lviv, Ukraine, June 14-20, 2009
- 2009 8th International FAM'2009 Conference. Krasnoyarsk, Russian, April 24-26, 2009
- 2008 International Conference on Modern Problems in Applied Mathematics. Tbilisi, Georgia, October 7-9, 2008
- 2008 The Second International Conference "Problems of Cybernetics and Infotmatics". PCI'2008. Baku, Azerbaijan, September 10-12, 2008
- 2007 International Conference dedicated to the 100th anniversary of academician I. Vekua's birth, Tbilisi, 2007



Other Activities

- 2017 -- Scientific Secretary of the City Scientific Seminar on Probability and Statistics
- 2016 -- Member of Scientific Committee of International Conference of Extended Sessions of I. Vekua Institute of Applied Mathematics and Head of Section of Probability Theory and Mathematical Statistics
- 2015 Deputy Chairman of the Organizing Committee of International Conference on Probability Theory and Statistics. Tbilisi, Georgia, September 7-12, 2015
- 2012 -- Member of Scientific Committee of Annual International Conference of the Georgian Mathematical Union
- 2008 - 2015 Member of Organizing Committee of Extended Sessions of I. Vekua Institute of Applied Mathematics and Head of Section of Probability Theory and Mathematical Statistics
- 2008 -- Member of the Scientific Committee of International Conference on Modern Problems of Applied Mathematics and chair of the Section of Probability theory and Mathematical Statistics
- 2007 -- Member of the publishing board of the faculty
- 2007 Member of International Scientific Conference Organizing Committee dedicated to the 100th anniversary of academician I. Vekua's birth, Tbilisi, 2007
- 2003 Member of Organizing Committee of International Scientific Conference dedicated to the 100th anniversary of academician A. Kolmogorov, Tbilisi, 2003



Selected Publications

1. O. Glonti, **O. Purtukhia**. Hedging of European Option with Nonsmooth Payoff Function. *Ukrainian Mathematical Journal*, **70, 6**, pp. 773-787 (2018).
2. B. Mamporia, **O. Purtukhia**. On functionals of the Wiener process in a Banach space. *Transactions of A.*

Razmadze Mathematical Institute. **172**, pp. 420-428 (2018).

3. B. Mamporia, O. Purtukhia. About one method of stochastic integral representation of Brownian functional. *Reports of Enlarged Sessions of the Seminar of I. Vekua Institute of Applied Mathematics*. **32**, pp.?? (2018).

4. O. Purtukhia. Stochastic integral representation of the payoff functions of European exotic type options. *Proceedings of the 6th International Scientific Conference "Mathematical Modeling, Optimization and Information Technologies (MMOTI- 2018)"*, Chisinau "Evrica", pp. 171-174 (2018).

5. O. Glonti, O. Purtukhia. On One Integral Representation of Functionals of Brownian Motion. *SIAM J. Theory of Probability & Its Applications*, **61, 1**, pp. 133-139 (2017).

6. H. Livinska, O. Purtukhia. Hedging of the European Option of the Exotic Type with a nonsmooth payoff function.. *Bulletin of TICMI*, **21, 2**, pp. 81-95 (2017).

7. O. Purtukhia, V. Jaoshvili. Hedging of Barrier type one European Option. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*. **31**, pp. 119-122 (2017).

8. O. Purtukhia, Z. Zerakidze. The weakly consistent, strongly consistent and consistent estimates of the parameters. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*. **31**, pp. 151-154 (2017).

9. O. Purtukhia, B. Ghvaberidze. The Extremal Problems in the Course of School Mathematics. Scientific-popular journal "Mathematics". **4**, pp. 20-26 (2017).

10. H. Livinska, O. Purtukhia. Stochastic Integral Representation of One Stochastically Non-smooth Wiener Functional. *Bulletin of TICMI*, **20, 2**, pp. 11-23 (2016).

11. O. Purtukhia. On the smoothness of conditional mean of some stochastically nonsmooth functionals. *Proceedings of I. Vekua Institute of Applied Mathematics*, **66**, pp. 52-57 (2016).

12. O. Purtukhia. Stochastic Integral Representation of One Nonsmooth Brownian Functional. *Bulletin of the Georgian National Academy of Sciences*, **10, 3**, pp. 17-26 (2016).

13. O. Glonti, O. Purtukhia. Об одном интегральном представлении броуновского функционала. *Теория вероятностей и ее применения*, **61, 1**, pp. 158-164 (2016).

14. B. Dochviri, O. Purtukhia. Martingale integral representation and its application in financial mathematics. *The first SDSU – Georgia STEM workshop on Nanotechnology and Environmental Sciences. Tbilisi, September 4-5, TSU*, pp.23-24 (2015).

15. O. Glonti, V. Jaoshvili, O. Purtukhia. Hedging of European Option of Exotic Type. *Proceedings of A. Razmadze Mathematical Institute*, **168**, pp. 25-40 (2015).

16. O. Purtukhia. Martingale Representation of Wiener functional. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*, **29**, pp. 115-118 (2015).

17. O. Purtukhia. The notion of conditional probability and its application. Scientific-popular journal "Mathematics". **2**, pp. 23-33 (2014).

18. B. Dochviri, O. Glonti, O. Purtukhia, G. Sokhadze. Radon-Nikodym derivative of solution of nonlinear equations with random right side and applications. *Transactions of National Academy of Sciences of Azerbaijan*, **XXXIV, 4**, pp. 45-52 (2014).

19. O. Glonti, O. Purtukhia. Hedging of European Option of Integral Type. *Bulletin of the Georgian National Academy of Sciences*, **8, 3**, pp.4-13 (2014).

20. O. Glonti, O. Purtukhia. Clark's Representation of Wiener functional and Hedging of the Barrier Option. *Bulletin of the Georgian National Academy of Sciences*, **8, 1**, pp. 32-39 (2014).

21. O. Glonti, O. Purtukhia. Hedging of One European Option of Integral Type in Black-Scholes Model. *International Journal of Engineering and Innovative Technology (IJEIT)*. **4, 5, November**, pp. 51-61 (2014).

22. P. Babilua, B. Dochviri, O. Purtukhia. On the optimal stopping of the standard Markov process. *Proceedings of the 21st International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 373-378 (2013).

23. P. Babilua, B. Dochviri, O. Purtukhia. On optimal stopping and variational inequalities. *Proceedings of the 21st International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 367-372 (2013).

24. P. Babilua, B. Dochviri, O. Purtukhia, G. Sokhadze. On the optimal stopping of partially observable processes. *Reports of Enlarged Sessions of the Seminar of I. Vekua Institute of Applied Mathematics*, **27**, pp. 5-9 (2013).

25. B. Dochviri, O. Purtukhia, G. Sokhadze, G. Tkemaladze On One Stochastic Model of a Chemical Reaction. *Bulletin of the Georgian Academy of Sciences*, **7, 2**, pp. 92-96 (2013).

26. P. Babilua, B. Dochviri, **O. Purtukhia**. On the Convergence of Payoffs. *The 4th International Conference "Problems of Cybernetics and Informatics"*. September 12-14, 2012, Baku, Azerbaijan, **III**, pp. 178-179 (2012).
27. V. Jaoshvili, **O. Purtukhia**. Sobolev-Poincare Type Inequalities for Poisson Functionals. *The 4th International Conference "Problems of Cybernetics and Informatics"*. September 12-14, 2012, Baku, Azerbaijan, **III**, pp. 173-177 (2012).
28. **O. Purtukhia**. Sobolev and Logarithmic Sobolev Type Inequalities. *Applied Mathematics, Informatics and Mechanics - AMIM*, **17**, **2**, pp. 26-39 (2012).
29. E.Nadaraya, **O. Purtukhia**, G.Sokhadze. On the Cramer-Rao inequality in an infinite dimensional space. *Proceedings of A.Razmadze Mathematical Institute*, **160**, pp. 121-134 (2012).
30. P. Babilua, B. Dochviri, **O. Purtukhia**. On the reduction problem in the optimal stopping by incomplete data. *Proceedings of the 20th International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 349-352 (2012).
31. V. Jaoshvili, **O. Purtukhia**. Ito type formula for Poisson anticipating integral. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*, **25**, pp. 103-108 (2011).
32. B.Dochviri, E.Nadaraya, **O. Purtukhia**, G.Sokhadze. On one problem of Stefan. *Applied Mathematics, Informatics and Mechanics - AMIM*, **16**, **1**, pp. 3-7 (2011).
33. P. Babilua, B. Dochviri, **O. Purtukhia**. On one problem of statistical estimation. *Proceedings of the 19th International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 384-387 (2011).
34. P. Babilua, B. Dochviri, **O. Purtukhia**. On One Problem of Disruption. *Proceedings of the 19th International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 78-82 (2011).
35. P. Babilua, B. Dochviri, **O. Purtukhia**, G.Sokhadze. About one problem of distinction of hypotheses. *Proceedings of the Sciences Conference "Problems of Modern Mathematics"*. Karshi, Uzbekistan, pp. 77-80 (2011).
36. B. Dochviri, **O. Purtukhia**, G.Sokhadze. On the modeling of the standard options pricing process. *Proceedings of the Sciences Conference "Problems of Modern Mathematics"*. Karshi, Uzbekistan, pp. 7-10 (2011).
37. P. Babilua, B. Dochviri, **O. Purtukhia**. On the pricing of American option. *Proceedings of the 18th International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 155-159 (2010).
38. P. Babilua, B. Dochviri, **O. Purtukhia**. On the pricing of European option. *Proceedings of the 18th International Conference "Problems of Management of Safety of Difficult Systems"*. Moscow, pp. 146-154 (2010).
39. V. Jaoshvili, **O. Purtukhia**. The Stein's identity and Poisson functionals. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*, **24**, pp. 113-118 (2010).
40. B. Dochviri, E. Nadaraya, **O. Purtukhia**, G. Sokhadze. On one problem of Hypotheses testing. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*, **24**, pp. 31-34 (2010).
41. V. Jaoshvili, **O. Purtukhia**. Stochastic derivative operator of two-dimensional Poisson functionals. *The Third International Conference "Problems of Cybernetics and Informatics"*. September 6-8, 2010, Baku, Azerbaijan, **II**, pp. 189-192 (2010).
42. B.Dochviri, **O. Purtukhia**, G.Sokhadze. On existence and uniqueness of solutions of general second order elliptic type differential equation in Hilbert space. *Reports of Enlarged Session of the Seminar of I. Vekua Institute of Applied Mathematics*, **23**, pp. 20-24 (2009).
43. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Multidimensional Poisson Functionals. *Seminar of I.Vekua Institute of Applied Mathematics. REPORTS*, **23**, pp. 92-95 (2009).
44. V. Jaoshvili, **O. Purtukhia**. An Extension of the Ocone-Haussmann-Clark Formula for the Compensated Poisson Processes. *SIAM J. Theory of Probability & Its Applications*, **53**, **2**, pp. 316-321 (2009).
45. Jaoshvili V., **Purtukhia O.** A New Approach to the Definition of Stochastic Derivative Operator of Poisson Functionals. *Stochastic Analysis and Random Dynamics*, June 14-20, 2009, Lviv, Ukraine, pp. 207-208.
46. V. Jaoshvili, **O. Purtukhia**. Martingale Representation Theorems for Multidimensional Wiener Functionals. *Bulletin of the Georgian National Academy of Sciences*, **2**, **1**, pp. 41-46 (2008).
47. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Multidimensional Polynomial Poisson Functionals. *Bulletin of the Georgian National Academy of Sciences*, **2**, **4**, pp. 19-22 (2008).
48. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Poisson Functionals. *The second international conference "Problems of cybernetics and informatics"*, Baku, 2008, **II**, pp. 242-245 (2008).

49. V. Jaoshvili, **O. Purtukhia**. Stochastic Derivative of Poisson Polynomial Functionals. *Proceedings of I.Vekua Institute of Applied Mathematics*, **58**, pp. 59-66 (2008).
50. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Two-Dimensional Poisson Functionals. *Reports of Enlarged Session of the Seminar of I.Vekua Institute of Applied Mathematics*, **22**, pp. 94-98 (2008).
51. V. Jaoshvili, **O. Purtukhia**. Обобщение формулы Оконе-Хаусмана-Кларка для компенсированного пуассоновского процесса. *Теория вероятн. и ее примен.*, **53**, **2**, pp. 349-354 (2008).
52. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Functionals of Poisson Processes. *Proceedings of A. Razmadze Mathematical Institute*, **143**, pp. 37-60 (2007).
53. V. Jaoshvili, **O. Purtukhia**. Stochastic Integral Representation of Functionals of Poisson Processes II. *Bulletin of the Georgian National Academy of Sciences*, **174**, **1**, pp. 29-32 (2006).
54. V. Jaoshvili, **O. Purtukhia**. Stochastic integral representation of functionals of Poisson processes I. *Bulletin. Georgian Acad. Sci.*, **172**, **2**, pp. 189-192 (2005).
55. V. Jaoshvili, **O. Purtukhia**. Stochastic integral representation of functionals of Wiener processes. *Bulletin. Georgian Acad. Sci.*, **171**, **1**, pp. 17-20 (2005).
56. **O. Purtukhia**. An Extension of Ocone-Haussmann-Clark's Formula for a class of Normal Martingales. *Proceedings of A. Razmadze Mathematical Institute*, **132**, pp.127-136 (2003).
57. **O. Purtukhia**. Fubini Type Theorems for Ordinary and Stochastic Integrals. *Proceedings of A. Razmadze Mathematical Institute*, **130**, 101-114 (2002).
58. **O. Purtukhia**. On the Representation of Measure-Valued Solution of Second Order Stochastic Parabolic Equations. *Proceedings of A. Razmadze Mathematical Institute*, **116**, pp. 133-158 (1998).
59. **O. Purtukhia**. On Formula Close to the Ito-Ventsel Formula. Proceedings of Sixth International Conference on Probability Theory and Mathematical Statistics, Vilnius 1993, pp. 97-99 (1993).
60. **O. Purtukhia**. On Ito-Ventsel formulas for anticipative processes. *New trends in probability and statistics*, 1, Vilnius, Lithuania, pp. 503-527 (1990), *VSP, Utrecht* (1991).
61. **O. Purtukhia**. On the Filtering Equations of a Multidimensional Diffusion Processes (Increasing Coefficients). *Theory Probab. Appl.*, **33**, **3**, pp. 574-578 (1989).
62. **O. Purtukhia**, B. Rozovskii. Measure-valued solutions of second-order stochastic parabolic equations (in Russian). *Statistics and control of random processes*, 'Nauka', Moscow, pp. 177-179 (1989).
63. **O. Purtukhia**. Conditional distributions of degenerate diffusion processes with unbounded coefficients (in Russian). *Proceedings of A. Razmadze Mathematical Institute*, **92**, pp. 73-88 (1989).
64. **O. Purtukhia**. Kolmogorov's Backward Equation Corresponding to Evolution Stochastic Equation. Proceedings of Fifth International Conference on Probability Theory and Mathematical Statistics, Vilnius 1989, pp. 101-105 (1989).
65. **O. Purtukhia**. Об уравнениях фильтрации многомерного диффузионного процесса (растущие коэффициенты). *Теория вероятн. и ее примен.*, **33**, **3**, pp. 616-621 (1988).
66. **O. Purtukhia**. The Cauchy problem for second-order ρ -parabolic Ito equation (in Russian). *Communications of Academy of Sciences of the Georgian SSR*, **124**, **3**, pp. 473-476 (1986).
67. **O. Purtukhia**. On Conditional Distribution of Diffusion Processes with Unbounded Coefficients. Proceedings of First World Congress of Bernoulli Society, USSR, Tashkent 1986, pp. 232-237 (1986).
68. **O. Purtukhia**. On the Characteristics of ρ -Parabolic Second Order Ito Equations. *Proceedings of Lithuanian Mathematics and Cybernetics Institute, Vilnius*, pp. 230-241 (1985).
69. **O. Purtukhia**. The Cauchy problem for linear partial differential Ito equation (increasing coefficients) (in Russian). *Random analysis and asymptotic problems of probability theory and mathematical statistics*, "Metsniereba", Tbilisi, pp. 57-71 (1984).
70. N. Krylov, **O. Purtukhia**. On Innovation Problem for the Degenerated Diffusion Processes with Unbounded Coefficients (in Russian). *Russian Mathematical Surveys (Uspekhi Mat. Nauk.)*, **39**, **4**, pp. 177-179 (1984).
71. **O. Purtukhia**. On the representation of the solution of the Cauchy problem. XVIII School-Seminar in Probability Theory and Mathematical Statistics. Bakuriani, 1984. Tbilisi "Metsniereba", pp. 54-63 (1984).



Textbooks

1. K. Manjgaladze, **O. Purtukhia**, G. Sokhadze. The basics of applied statistics. TSU Publishing House, Tbilisi, 2015, ISBN 978-9941-13-397-8., 343 pages.

2. **O. Purtukhia.** Probability-statistical tasks. TSU Publishing House, Tbilisi, 2012, 2013, 2015, 2017, ISBN 978-9941-13-217-9, 562 pages; Fifth edition – 2018.
3. **O. Purtukhia.** The theory of random processes. TSU Publishing House, Tbilisi, 2009, ISBN 978-9941-13-075-5, 295 pages; Second edition – 2013.
4. **O. Purtukhia.** Probability theory and mathematical statistics for economists. TSU, Tbilisi, 2013: <http://e-learning.tsu.ge>.
5. K. Manjgaladze, **O. Purtukhia**, Z. Tsigroshvili. Higher Mathematics, Part III, Probability and Mathematical Statistics. TSU Publishing House, Tbilisi, 2009, ISBN 978-9941-13-133-2, 252 pages.
6. K. Manjgaladze, **O. Purtukhia.** Elements of probability theory and statistics (Assistant Manual for Teacher Professional Development). Publishing House "Meridiani", Tbilisi, 2009, ISBN 978-9941-10-184-7, 192 pages.
7. L. Aleksidze, Z. Khechinashvili, **O. Purtukhia**, Z. Zarakidze. Probability theory and mathematical statistics. Tbilisi 2009, ISBN 978-9941-0-1461-1, 230 pages.
8. **O. Purtukhia.** Probability and statistics in examples and tasks. Publishing House "Mtsignobari", Tbilisi, 2009, ISBN 978-9941-0-1204-4, 268 pages.
9. **O. Purtukhia.** Descriptive statistics, probability, theory of statistical conclusions. Publishing House "Mtsignobari", Tbilisi, 2008, ISBN 978-9941-0-0693-7, 418 pages.
10. **O. Purtukhia.** Probability theory and mathematical statistics. Publishing House "Mtsignobari", Tbilisi, 2008, ISBN 978-9941-0-0391-2, 204 pages.