

SERGEY N. POSTOVALOV

Curriculum Vitae February 2021

Department of Mechanics and Mathematics,
Theoretical Cybernetics Section, Full Professor
Novosibirsk State University (NSU), Russia

Department of Theoretical and Applied
Informatics, Faculty of Applied Mathematics and
Computer Science, Full Professor
Novosibirsk State Technical University (NSTU),
Russia



E-mail: postovalovsn@gmail.com

Date of birth: May 26, 1972

Marital status: Married + 4

Scopus AuthorID: 6507837548

ResearcherID: S-7345-2016

ORCID: 0000-0003-3718-1936

EDUCATION

- 1989-1994 Diploma Engineering in Applied Mathematics and Computer Science,
Novosibirsk State Technical University (NSTU), Russia
- 1994-1997 Ph.D, NSTU, Russia.
Title of Ph.D. Thesis (Candidate of Technical Science): “*Statistical Analysis of the Interval Observations*” (1998).
Supervisor: Professor Boris Yu. Lemeshko.
- 2010-2013 Post-doctoral fellows at the Department of Applied Mathematics, NSTU
Title of Sc. D. Thesis (Doctor of Technical Science): “*Computer Simulation for Improving Classical Methods of Statistical Hypothesis Testing*” (2014).
Science Consultant: Professor Boris Yu. Lemeshko.

ACADEMIC AND PROFESSIONAL EXPERIENCE

- 1997-2000 Assistant Professor, Department of Applied Mathematics, NSTU
- 2000-2014 Associate Professor, Department of Applied Mathematics, NSTU
- 2014 Associate Professor, Department of Theoretical and Applied Informatics, NSTU
- 2015- Professor, Department of Theoretical and Applied Informatics, NSTU
- 2015- Professor, Department of Theoretical Cybernetics, NSU
- 2009- Senior Consultant, Consulting Center for Science, Engineering and Technical Solutions Ltd.
- 2012 Research trip to Institute of Medical Biometry and Statistics at Lübeck University (Germany) by invitation Prof. A. Ziegler

2013 Short-term research trip to Tel Aviv University (Israel) by invitation Prof. D. Steinberg

RESEARCH FIELDS

- Mathematical and Applied Statistics
- Statistical Hypothesis Testing
- Sequential Analysis
- Monte Carlo Simulation
- Statistical Genetics
- Machine Learning and Data Mining

TEACHING EXPERIANCE

- Computer Technologies for Data Analysis (since 1998, 21 years)
- Mathematical Statistics (since 2002, 16 years)
- Optimization Methods (1997- 2010,2019-2021, 15 year)
- Game Theory and Operations Research (1997-2010, 12 years)
- Programming the System "1C: Enterprise" (2002-2015, 12 years)
- Mathematical Analysis (1997-1999, 2 years)
- Object-Oriented Programming (2000-2001, 2 years)
- Probability Theory (1995-1996, 2020, 2 year)
- Assembler (1999, 1 year)
- Mathematical Basics of Quality Management (2005, 1 year)
- Statistical Software (2014, 1 year)
- Machine Learning and Data Mining (since 2019, 2 year)

SKILLS

I have an experience of programming in C++ like a developer of statistical packages; also I have an experience of work with R, SPSS and Statistica.

ACADEMIC AND PROFESSIONAL AWARDS

- 2004-2005 "The usage of computer technologies for studying statistical regularities in the problems parameters estimation and hypothesis testing". Federal Science Target Program "Research and development of priority directions of science and techniques 2002-2006 years (project 19.0/002/091), Principal Investigator
- 2005-2006 "The development of computer technology for the study of statistical regularities", Federal Science Target Program "Research and development of priority directions of science and techniques 2002-2006 years (project 19.0/001/119), Principal Investigator
- 2000-2002 "Computer methods for the study of statistical regularities", Russian Foundation for Basic Research (project 00-01-00913a), Investigator
- 2006-2008 "Expansion of the applied capabilities of the classical methods of mathematical statistics", Russian Foundation for Basic Research (project 06-01-00059a), Investigator
- 2009-2012 "Development of the methods of applied mathematical statistics, statistical methods for the analysis of survival and reliability (computer approach)", Russian Foundation for Basic Research (project 09-01-00056a), Investigator
- 2009-2013 "Formation of a scientific school in the field of statistical methods and simulation in the problems of reliability research, quality control and survival", Federal

| | |
|-----------|--|
| | Target Program “Research and scientific-pedagogical personnel of innovative Russia 2009-2013 years” (project HK-421II, contract number 14.B37.21.0860), Investigator |
| 2011-2012 | "The study of sequential tests and their application in biostatistics" Awarded DAAD grant A/11/76161; Russian Ministry of Education and Science as part of the state task (projects 8.1274.2011 and 10.74.2011), Principal Investigator |
| 2014-2016 | "Computer simulation systems as an effective tool for the development of modern methods of applied mathematical statistics ", Russian Ministry of Education and Science as a part of the state task (project 2.541.2014K), Investigator |
| 2017-2019 | Development of the methods of applied mathematical statistics and reliability of statistical conclusions in the case of violation of standard assumptions", Russian Ministry of Education and Science as a part of the state task (project 1.1009.2017/IIЧ), Investigator |
| 2020-2021 | Genome-wide search for regulatory SNPs associated with the development of oncological diseases based on a comprehensive analysis of allele-specific events in the experimental data of ChIP-seq and RNA-seq, Russian Foundation for Basic Research (project 18-29-09041), Investigator |

AWARDS RECEIVED BY STUDENTS

| | |
|-----------|---|
| 2011 | M. Sc. Student Madina Panteleeva awarded research grant of NSTU for students. |
| 2013,2014 | M. Sc. Student Petr Philonenko awarded research grant of NSTU for students |
| 2017 | M. Sc. Student Dmitry Poverin awarded research grant of NSTU for students |

LIST OF PUBLICATIONS

ARTICLES IN PEER-REVIEWED JOURNALS

1. Lemeshko B.Yu., **Postovalov S.N.** Statistical analysis of one-dimensional observations from partially grouped data // Russian Physics Journal (Historical Archive). Vol. 38, Number 9, September 1995. – P. 901 – 906.(Translated from Izvestiya Vysshikh Uchebnykh Zavedenii, Fizika, No. 9, pp. 39–45, September, 1995)
2. Lemeshko B.Y., **Postovalov S.N.** About solving of statistical analysis problems of interval observations // Computational technologies. 1997. V. 2. № 1. P. 28-36 [In Russian]
3. Lemeshko B.Yu., **Postovalov S.N.** Statistical distributions of nonparametric goodness-of-fit tests as estimated by the sample parameters of experimentally observed laws // Industrial laboratory (Ind. lab.). 1998, vol. 64, no3, pp. 197-208 (Consultants Bureau, New York)
4. Lemeshko B.Yu., **Postovalov S.N.** Limit distributions of the Pearson chi 2 and likelihood ratio statistics and their dependence on the mode of data grouping // Industrial laboratory. 1998, vol. 64, no5, pp. 344-351. (Consultants Bureau, New York, NY, ETATS-UNIS)
5. Lemeshko B.Yu., **Postovalov S.N.** Application of the nonparametric goodness-of-fit Tests in testing composite hypotheses // Optoelectronics, Instrumentation and Data Processing. 2001. - № 2. - P. 76-88

6. Lemeshko B.Yu., **Postovalov S.N.**, Frantsuzov A.V. Application of the nonparametric goodness-of-fit tests to testing nonparametric model adequacy // *Optoelectronics, Instrumentation and Data Processing*. 2002. - № 2. - P. 3-12
7. Lemeshko B.Yu., Lemeshko S.B., **Postovalov S.N.** The power of goodness of fit tests for close alternatives // *Measurement Techniques*, 2007. V.50, № 2. – P. 132-141
8. Lemeshko B.Yu., Lemeshko S.B., and **Postovalov S.N.** Comparative Analysis of the Power of Goodness-of-Fit Tests for Near Competing Hypotheses. I. The Verification of Simple Hypotheses // *Journal of Applied and Industrial Mathematics*, 2009, Vol. 3, No. 4, pp. 462–475.
9. Lemeshko B.Yu. Lemeshko S.B. and **Postovalov S.N.** Comparative analysis of the power of goodness-of-fit tests for near competing hypotheses. II. Verification of complex hypotheses // *Journal of Applied and Industrial Mathematics*, 2010, Vol. 4, No. 1, – pp. 79–93.
10. Lemeshko B.Yu., Lemeshko S.B. and **Postovalov S.N.** Statistic Distribution Models for Some Nonparametric Goodness-of-Fit Tests in Testing Composite Hypotheses // *Communications in Statistics - Theory and Methods*, 2010. Vol. 39, No. 3. – pp. 460-471.
11. **Postovalov S.N.** Simple and Composite Hypotheses Testing by Sequential Wald’s Test // *Proceedings of the Russian Higher School Academy of Sciences*. - 2011. - № 2(17). - pp.140-150. [In Russian]
12. **Postovalov S.N.**, Shakhmametova M.R. Simple and composite hypotheses testing by sequential Lorden’s and Ayvazyan’s tests // *SCIENCE BULLETIN OF THE NOVOSIBIRSK STATE TECHNICAL UNIVERSITY*. - Novosibirsk, 2011. - № 3 (44). - pp. 17-28. [In Russian]
13. **Postovalov S.N.**, Naumova E. A. Comparative analysis of the power of goodness-of-fit tests for composite hypotheses in dependence on the estimation method // *Sib. Zh. Ind. Mat.*, 16:1 (2013), pp. 84–94 [In Russian]
14. Philonenko P.A., **Postovalov S.N.** Study of the influence of the distribution law of censoring times and the censoring degree on the power of homogeneity tests // *Sib. Zh. Ind. Mat.*, 17:3 (2014), 122–134 [In Russian]
15. Philonenko P. A new two-sample test for choosing between log-rank and Wilcoxon tests with right-censored data / P. Philonenko, S. Postovalov // *Journal of Statistical Computation and Simulation*. - 2015. - Vol. 85, Iss. 14. - P. 2761-2770. - DOI: 10.1080/00949655.2014.941533.
16. Philonenko P. The limit test statistic distribution of the maximum value test for right-censored data / P. Philonenko, S. Postovalov, A. Kovalevskii // *Journal of Statistical Computation and Simulation*. - 2016. - Vol. 86, iss. 17. - P. 3482-3494
17. Philonenko P. The new robust two-sample test for randomly right-censored data / P. Philonenko, S. Postovalov // *Journal of Statistical Computation and Simulation*, Volume 89, 2019 - Issue 8, Published Online. DOI:10.1080/00949655.2019.1578769

CHAPTERS IN BOOKS

18. Software System for Simulation and Research of Probabilistic Regularities and Statistical Data Analysis in Reliability and Quality Control / B.Yu. Lemeshko, S.B. Lemeshko, E.V. Chimitova, **S.N. Postovalov**, A.P. Rogozhnikov // In: Mathematical and Statistical Models and Methods in Reliability. Applications to Medicine, Finance, and Quality Control / Editors: V. Rykov, N. Balakrishnan, M. Nikulin / Series "Statistics for Industry and Technology" / Birkhäuser, Boston. 2011. – P. 417-432.
19. **Postovalov S.** A Comparison of Homogeneity Tests for Different Alternative Hypotheses / S. Postovalov, P. Philonenko // Statistical Models and Methods for Reliability and Survival Analysis. In honor of M.S. Nikulin : monograph. - London : ISTE Ltd and John Wiley & Sons Inc, 2013. - P. 177-194.
20. Philonenko P. A. Wald optimal two-sample test for right-censored data / P. A. Philonenko, **S. N. Postovalov** // Advanced mathematical and computational tools in metrology and testing XI. - New Jersey : World Scientific Publishing, 2018. - P. 265-272. - (Series on advances in mathematics for applied sciences ; vol. 89). - ISBN 978-981-3274-29-7 . - DOI: 10.1142/9789813274303_0026.

MONOGRAPHS

21. Statistical Data Analysis, Simulation and Study of Probability Regularities. Computer Approach: monograph / B.Yu. Lemeshko, S.B. Lemeshko, **S.N. Postovalov**, E.V. Chimitova. – Novosibirsk : NSTU Publisher, 2011. – 888 pp. ("NSTU Monographs" series) [In Russian]. ISBN 978-5-7782-1590-0 [In Russian]

PUBLICATIONS IN PROCEEDINGS OF CONFERENCES

22. Manusov V., Patrushev S.B., **Postovalov S.** Linguistic variables in the field of quality conference evaluation of scientificbrainpower training // Intern. conf. of engineering Education. – M., 1995. – P. 28-33.
23. Denisov V.I., Lemeshko B.Yu., Tsoi Y.B., Tishkovskaya S.V., **Postovalov S.N.** Software for statistical analysis of grouped data // Proceedings The First Korea-Russia International Symposium on Science and Technology (KORUS'97). - Republic of Korea, Ulsan, 1997. - P. 239-243.
24. Lemeshko B.Yu., **Postovalov S.N.** Nonparametric goodness-of-fit tests when checking composite hypotheses // Proceedings The Third Russian-Korean International Symposium on Science and Technology (KORUS-99). Novosibirsk. Russia. June 22-25, 1999. Vol.2. - P.501-504.

25. Lemeshko B.Yu., **Postovalov S.N.**, Chimitova E.V. Rules of application of goodness-of-fit tests in simple and composite hypothesis testing // The 7th Korea-Russia International Symposium on Science and Technology (KORUS 2003). University of Ulsan. June 28-July 6, 2003. – Vol.3. – P.126-132.
26. Lemeshko B.Yu., **Postovalov S.N.**, Chimitova E.V., Pomadin S.S., Ponomarenko V.M., Frantsuzov A.V., Mirkin E.P., Lemeshko S.B. Computer simulation technique on the investigation of statistical regularities // Proceedings of 8th Korea-Russia International Symposium on Science and Technology (KORUS 2004). Tomsk. Russia. June 26-July 3, 2004. – Vol.2. – P.149-152.
27. Lemeshko B.Yu., **Postovalov S.N.**, Chimitova E.V. Numerical Research Of The Theoretical Recommendations Of Mathematical Statistics In Non-Standard Conditions // Proceedings of the Seventh International Conference “Computer Data Analysis and Modeling: Robustness and Computer Intensive Methods”, September 6-10, 2004, Minsk. Vol. 1. – P. 94-97.
28. Lemeshko B.Yu., Lemeshko S.B., **Postovalov S.N.** Improvement of statistic distribution models of the nonparametric goodness-of-fit tests in testing composite hypotheses // XIIth Applied Stochastic Models and Data Analysis (ASMDA 2007) International Conference. Book of Abstracts. May 29 – June 1, 2007. Chania, Crete, Greece. Editor Christos H.Skiadas. – P. 111.
29. Andreychenko, A.V., **Postovalov, S.N.**, Group intervals for Rao-Robson-Nikulin's criterion selection with help of noncentrality parameter maximization // Electronic Instrument Engineering, 2008. APEIE 2008. 9th International Conference on Actual Problems of , vol.01, no., pp.196,197, 23-25 Sept. 2008, doi: 10.1109/APEIE.2008.4897169
30. Computer methods for investigating statistical regularities in problems of statistical data analysis and reliability / B.Yu. Lemeshko, S.B. Lemeshko, **S.N. Postovalov**, E.V. Chimitova // MMR 2009 - Mathematical Methods in Reliability. Theory. Methods. Applications. VI International Conference. Extended Abstracts. Moscow, 22-29 June, 2009. – P.418-422.
31. Distributed computing system for simulation of classical test statistic distributions under nonstandard conditions / E.V. Chimitova, B.Yu. Lemeshko, S.B. Lemeshko, **S.N. Postovalov**, A.P. Rogozhnikov // Proceedings Third International Conference on Accelerated Life Testing, Reliability-based Analysis and Design. 19-21 May 2010, Clermont-Ferrand, France. – P.107-109
32. **Postovalov S.** Convergence of two-sample test statistic distributions to the limiting law / M.A. Ishalina, S.N. Postovalov // Proceedings Third International Conference on Accelerated Life Testing, Reliability-based Analysis and Design. 19-21 May 2010, Clermont-Ferrand, France. – P.237-242.
33. **Postovalov S.**, Shakhmametova M. Sequential probability ratio tests (2-SPRT and Ayvazyan's test) for simple and composite hypotheses // XIVth Applied Stochastic

- Models and Data Analysis (ASMDA 2011) International Conference. Proceedings. June 6 – June 11, 2011. Rome, Italy. – P. 1118-1125.
34. **Postovalov S.** Reduction of the Average Sample Number in Sequential Scheme of Testing Hypotheses / S. Postovalov, M. Shakhmametova // Applied Methods of Statistical Analysis. Simulations and Statistical Inference (AMSA 2011) International Conference. Proceedings. 20-22 September, 2011. Novosibirsk, Russia – P. 158-166
 35. Philonenko P., **Postovalov S.** A power comparison of homogeneity tests for randomly censored data // Applied Methods of Statistical Analysis. Simulations and Statistical Inference (AMSA 2013) International Conference. Proceedings. 25-27 September, 2013. Novosibirsk, Russia – P. 227-237
 36. **Postovalov S.** Optimal Discrete Two-Stage Study Design for Genome-Wide Association Studies / S. Postovalov, A. Ziegler, E. Konomanina // Applied Methods of Statistical Analysis. Simulations and Statistical Inference (AMSA 2013) International Conference. Proceedings. 25-27 September, 2013. Novosibirsk, Russia – P. 238-249.
 37. The limit distribution of the maximum value test statistic in the general case / P. Philonenko, S. N. Postovalov, A. P. Kovalevskiy // 11 International forum on strategic technology (IFOST 2016) : proc., Novosibirsk, 1–3 June 2016. – Novosibirsk : NSTU, 2016. – Pt. 1. – P. 428-430. - ISBN 978-1-5090-0853-7. - DOI: 10.1109/IFOST.2016.7884145
 38. Postovalov S. A power comparison of the association tests for genome-wide association studies / S. Postovalov, R. W. Metge // 11 International forum on strategic technology (IFOST 2016) : proc., Novosibirsk, 1–3 June 2016. – Novosibirsk : NSTU, 2016. – Pt. 1. – P.461-464. - ISBN 978-1-5090-0853-7. - DOI: 10.1109/IFOST.2016.7884154.
 39. Philonenko P. A. New robust statistical method for two-sample problem testing under right-censored data / P. A. Philonenko, S. N. Postovalov // Applied methods of statistical analysis. Nonparametric methods in cybernetics and system analysis : proc. of the intern. workshop, Krasnoyarsk, 18–22 Sept. 2017. – Novosibirsk : NSTU, 2017. – P. 152-159. - ISBN 2313-870X. - <http://www.amsa.conf.nstu.ru/amsa2017/proceedings/AMSA2017-proceedings.pdf>
 40. Philonenko P. A. Convergence rate of survival function estimator for randomly right-censored data / P. A. Philonenko, S. N. Postovalov // Actual problems of electronic instrument engineering (APEIE–2018) : 14 intern. conf., Novosibirsk, 2–6 oct. 2018 г. : in 8 vol. – Novosibirsk : NSTU publ., 2018. – T. 1, ч. 4. – P. 232-235. - ISBN (NSTU) 978-5-7782-3614-1. - <https://elibrary.ru/item.asp?id=37313825>
 41. Philonenko P. A. On the distribution of the MIN3 two sample test statistic / P. A. Philonenko, S. N. Postovalov // Applied methods of statistical analysis. Statistical computation and simulation, AMSA'2019 : proc. of the intern. workshop, Novosibirsk, 18–20 Sept. 2019. – Novosibirsk : NSTU publ., 2019. – P. 173-180. - ISBN 2313-870X. - <http://amsa.conf.nstu.ru/amsa2019/proceedings/AMSA2019-proceedings.pdf>

42. Philonenko P. A. The research of the two-sample test statistics convergence rate / P. A. Philonenko, S. N. Postovalov // Applied methods of statistical analysis. Statistical computation and simulation, AMSA'2019 : proc. of the intern. workshop, Novosibirsk, 18–20 Sept. 2019. – Novosibirsk : NSTU publ., 2019. – P. 181-187. - ISBN 2313-870X. - <http://amsa.conf.nstu.ru/amsa2019/proceedings/AMSA2019-proceedings.pdf>
43. Accessing the impact of functional variants on human phenotypes by transcriptome analysis in individuals carrying different rSNP alleles [Electronic resource] / S. N. Postovalov, V. M. Nedelko [et al.] // Cognitive sciences, genomics and bioinformatics (CSGB) : proc., intern. symp. will take place in the frame of 12 intern. multiconf. «Bioinformatics of genome regulation and structure/systems biology», Novosibirsk, 6-10 July 2020. – Novosibirsk : IEEE, 2020. – P. 10-13. - Mode of access: <https://ieeexplore.ieee.org/document/9214706>. - DOI: 10.1109/CSGB51356.2020.9214706.
44. Genome-wide association study of Parkinsons disease using max3 test [Electronic resource] / G. Ozhegov, D. V. Poverin, S. Medvedev, S. Zakian, Yu. V. Vyatkin, S. N. Postovalov // BGRS/SB-2020: Bioinformatics of genome regulation and structure/systems biology : 12 intern. multiconf., Novosibirsk, 6–10 July 2020. – Novosibirsk, 2020. - P. 83-84. - Mode of access: https://elibrary.ru/download/elibrary_43919211_88098733.pdf. - DOI: 10.18699/BGRS/SB-2020-051.
45. On the relationship between regulatory and exomic DNA markers [Electronic resource] / S. N. Postovalov, V. Berikov, L. Bryzgalov, E. Korbolina // Ural symposium on biomedical engineering, radioelectronics and information technology (USBREIT) : [proc.], Yekaterinburg, 14–15 May 2020. – [Yekaterinburg] : IEEE,2020. – P. 97-100. - Mode of access: <https://ieeexplore.ieee.org/document/9117734>. - DOI: 10.1109/USBREIT48449.2020.9117734