



Natalia Markovich

Resumé

Birth Place and Date:

Samara, Russia, 26.11.1960

Citizenship:

Russian Federation

Family Status:

Divorced, one daughter (1992)

Education

1977–1982 **Master**, *Department of Applied Mathematics and Cybernetics Tver State University, Tver, Russia, M.Sc. Degree (with distinction) 1982.*

1985–1987 **PhD**, *Institute of Control Sciences of Russian Academy of Sciences (ICS RAS), Moscow, Russia, Ph.D. in ICS RAS, 1991.*

Title "Non-parametric estimation of a probability density function by a stochastic regularization method"

2004 **Habilitation**, *Institute of Control Sciences of Russian Academy of Sciences (ICS RAS), Moscow, Russia, D.Sc. in ICS RAS, 2004.*

Title "Estimation of characteristics of heavy-tailed random variables by limited samples"

Supervisors

In ICS RAS Prof Dr. Hab. V.N. Vapnik from 1985-1987

Employment and Research Experience

1995–2005 **Senior scientist**, *V.A. Trapeznikov Institute of Control Sciences, Moscow, Laboratory 38, Profsoyuznaya 65, 117997 Moscow, Russia.*

Phone: +74953348820

2005–2007 **Leading scientist**, *V.A. Trapeznikov Institute of Control Sciences, Moscow, Laboratory 38, Profsoyuznaya 65, 117997 Moscow, Russia.*

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2007–present **Chief scientist**, *V.A. Trapeznikov Institute of Control Sciences*, Moscow, Laboratory 38, Profsoyuznaya 65, 117997 Moscow, Russia.
Phone: +74953348820

Previous employment

- 1982–1985 **Engineer**, *Special Design Bureau of Control Tools*, Tver, Russia.
1987–1991 **Research scientist**, *Scientific Research Institute of Aviation Equipment*, Moscow region.
1991–1993 **Senior scientist**, *All-Union Center for Preventive Medicine*, Moscow.
1993–1995 **Senior scientist**, *Toxicology Information and Advisory Center Russian Ministry of Health*, Moscow.

Languages

- English **Upper-Intermediate**
German **Upper-Intermediate**
Russian **mother tongue**

Research employment and scientific collaborations:

- 1995–1996 Geomedical Research Unit, Heidelberg Academy for the Humanities and Sciences, Germany. Participation in the EU research CINDI Countrywide Integrated Noncommunicable Diseases Intervention Programme
1998–2002 Technologiezentrum Darmstadt, T-Systems Nova, Deutsche Telekom AG
1998–2001 Member of the EU research action **COST 257 "Impact of new services on the architecture and performance of broadband networks"** as associated member of the teletraffic research team of T-Systems Nova, Deutsche Telekom
2001–2002 Member of the **Eurescom project P1112 "Network Dimensioning based on Modeling of Internet Traffic"** as associated member of the teletraffic research team of T-Systems Nova, Deutsche Telekom
2001–2002 Member of the EU research action **COST 279 "Analysis and Design of Advanced Multiservice Networks Supporting Mobility, Multimedia and Internet working"** as associated member of the teletraffic research team of T-Systems Nova, Deutsche Telekom
2003–2008 Team leader in the **EU research Euro-NGI, Euro-FGI "Design and Engineering of the Next Generation Internet Towards convergent multi- service networks"**
2008–2012 Team leader in the EU research **COST Action IC0703 "Data Traffic Monitoring and Analysis (TMA): theory, techniques, tools and applications for the future networks"**

Research and travel grants:

- 1995–1996 Geomedical Research Unit, Heidelberg Academy for the Humanities and Sciences, Germany

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- 09-12.1997 Max Planck Institute for Demographic Research, Rostock, Germany
- 2000 Lund University, Sweden
- 2004 ETH Zuerich, Switzerland
- 2007 Research grant of Department of Telematics, Norwegian University of Science and Technology NTNU Trondheim, Norway
- 2010-2012 World Bank Fund travel grants for participation in ISI 58th and 59th ISI World statistics congresses, ISBIS 2010
- 11.2012 Kepler University, Linz, Austria
- 07.2013 **Sejours Scientifique de Haut Niveau (SSHN)**, finances par l'Ambassade de France en Russie
- 2014-2015 Collaborator in the **Russian Foundation for Basic Research, grant 13-08-00744 A**
- 07.2016 **DAAD scholarship 91619901** (Germany)
- 2019-2021 Team leader in the Russian Foundation for Basic Research, grant 19-01-00090-19

Research Experience and Interests:

- Mathematical statistics, applied probability, nonparametric estimation, dependence modeling via copulas, extreme value theory, statistical analysis of heavy-tailed distributions and rare events, density estimation, renewal function estimation, high quantile estimation, time series, inverse problems
- Application to telecommunication: statistical analysis of Web-traffic, QoS problems, caching
- Application to social networks: evaluation of extremes for different sampling strategies
- Application to population and life time analysis

Teaching Experience:

- Course "Analysis methods of heavy-tailed data"
- 02.2006 at Otto-Friedrich University, Bamberg, Germany
- 06.2006 at ENST Brest, Bretagne, France
- 05.2007 at Norwegian University of Science and Technology NTNU Trondheim, Norway
- 11.2012 at Kepler University of Linz, Austria
- 2012-present in Moscow Institute of Physics and Technology State University, Moscow, Russia

Referee Activities:

- IEEE Transactions on Signal Processing, Inverse Problems in Science and Engineering, Annals of Statistics, Journal Of Nonparametric Statistics, Journal of the Royal Statistical Society, Telecommunication Systems, Performance Evaluation, Automation and Remote Control, Mathematical Reviews, Izvestiya RAN: Physics of the earth, Transactions on Modeling and Performance Evaluation of Computing Systems, Journal of Statistical Computation and Simulation, Extremes, Journal of Applied Statistics

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2012-present Associate editor of Journal Statistical Planning and Inference

Theses Committees

- March 2014 Igor Rodionov, "Statistical analysis and hypothesis testing about distributions of extremes in time series", Lomonosov Moscow State University, supervisor Prof. Dr. Vladimir Piterbarg
- April 2014 Anna Goldaeva, "Heavy tails, extremes and clusters of linear stochastic recurrent sequences", Lomonosov Moscow State University, supervisor Doc. Dr. Alexei Lebedev

Membership:

- 2015-present ISI elected member
- 2010-present International Society on Business and Industrial Statistics ISBIS
- 2013 International Association IASS
- 2011-2016 Charting committee of International Society for NonParametric Statistics (ISNPS)

Academic awards:

- 2005, 2011, 2017 Prizes for the best private achievements ICS RAS
- 2014 Pugachev's award ICS RAS
- 2013 Honorary certificate of Russian Academy of Sciences
- 2017 Honorary certificate of Russian Ministry of Sciences and Education

Organization of conference sessions

- 2011 The 58th ISI World statistics congress ISI 2011, Dublin, August 21-26
- 2012 The First conference of international society of nonparametric statistics ISNPS Halkidiki, Greece
- 2013 The International IFAC Conference on Manufacturing Modelling, Management, and Control, MIM' 2013, Saint-Petersburg, Russia, June 19-21
- 2013 The 59th ISI World Statistics Congress, 25-30 August, Hongkong, China
- 2014 The Second Conference of International Society of Nonparametric Statistics ISNPS, Cadix Spain
- 2014 The 11th International Vilnius Conference on Probability and Mathematical Statistics, Lithuania, 30 June to 4 July
- 2016 The Third Conference of International Society of Nonparametric Statistics ISNPS, Avignon France

Seminar talks and tutorials:

- 1990 Moscow Institute for the Transmission Information of Russian Academy of Sciences
- 1997 Rostock Max Planck Institute

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|------|---|------|---|
| 1998 | Moscow Lomonosov University,
Technical University Munich,
Deutsche Telekom Darmstadt | 1999 | Eurandom Eindhoven, Techni-
cal University Munich, Deutsche
Telekom Darmstadt |
| 2000 | Lund University, Wuerzburg Uni-
versity, Deutsche Telekom Darm-
stadt | 2001 | Moscow Lomonosov University,
Deutsche Telekom Darmstadt |
| 2002 | Brunel University London,
Deutsche Telekom Darmstadt | 2003 | Goethe-University Frankfurt,
Weierstrass-Institute Berlin |
| 2004 | ETH Zurich, Moscow
Lomonosov University | 2005 | Eurandom Eindhoven, Pisa Uni-
versity |
| 2006 | Wuerzburg University, Helsinki
Technical University | 2007 | NTNU Trondheim, Norway |
| 2008 | University of Salerno, University
of Samos Greece | 2010 | Zakopane Poland |
| 2011 | University of Zagreb Croatia,
Karlsruhe Institute of Technol-
ogy Germany, Mathematical In-
stitute Utrecht Netherland | 2012 | Kepler University Linz, Austria |
| 2013 | INRIA Sophia Antipolis France | 2016 | Moscow University, Shiryaev's
seminar |

Visits as invited scientist:

- 1995-1996 Geomedical Research Unit, Heidelberg Academy for the Humanities and Sciences, Germany
- 1997 Max Planck Institute Rostock
- 1998-2002 Deutsche Telekom Darmstadt
- 2000 Lund University (Sweden)
- 2004 ETH Zuerich
- 2005 Pisa University
- 2004-2017 Otto-Friedrich University Bamberg, Germany
- 2006 VTT, Helsinki, Finland
- 2007 NTNU, Trondheim, Norway
- 2009 Telecom Bretagne, Brest, France
- 2011 Utrecht, Netherland
- 2012 Kepler University, Linz, Austria
- 2013, 2016 INRIA, Sophia Antipolis, France

Books:

- 2007 Natalia Markovich **"Nonparametric Analysis of Univariate Heavy-Tailed data: Research and Practice"**, Wiley

Book chapters:

- 1995 Markovich N.M., Mathematical Concepts, In the book: Morgenstern, W., Ivanov, V.K., Michalski, A.I., Tsyb, A.F., Schettler, G., eds., *Mathematical modelling with Chernobyl Registry Data*, Springer, Heidelberg
- 2009 Markovich N. M. and Krieger U. R., Statistical Inspection and Analysis Techniques for Traffic Data Arising from the Internet, Chapter 2, *Traffic and Performance Engineering for Heterogeneous Networks*, D.D. Kouvatsos (Ed.), ISBN 978-87-92329-16-5, River Publishers Series in Information Science and Technology, Vol. 1, pp. 41–60
- 2011 Markovich N. M. and Krieger U. R., Statistical Analysis and Modeling of Peer-to-Peer Multimedia Traffic, In: *Performance Handbook SPIN 12440030, LNCS 5233*, ISBN 978-3-642-02741-3, Series: *Lecture Notes in Computer Science, Next Generation Internet: Performance Evaluation & Applications*, Springer, pp. 70–97
- 2010 Markovich N.M., Biernacki A., Eittenberger P., Krieger U.R., Integrated Measurement and Analysis of Peer-to-Peer Traffic, Eighth International Conference on Wired/Wireless Internet Communications, June 1-3, Lulea, Sweden, WWIC 2010 In: E. Osipov et al. (Eds.), *Proc. WWIC2010, Lecture Notes in Computer Sciences LNCS 6074*, p. 302-314, Springer, Heidelberg, ISBN 978-3-642-13314-5
- 2013 Markovich N. M. and Krieger U. R., Analysis of Packet Transmission Processes in Peer-to-Peer Networks by Statistical Inference Methods. Ernst Biersack, Christian Callegari, Maja Matijasevic (Eds.): *Data Traffic Monitoring and Analysis From Measurement, Classification, and Anomaly Detection to Quality of Experience*, LNCS 7754, pp. 104–119 Springer Verlag, Berlin, Heidelberg, ISBN: 978-3-642-36783-0 (Print) 978-3-642-36784-7 (Online)
- 2014 Markovich N. M. and Krieger U. R., Modeling of Loss Processes Arising from Packet Flows at Bottleneck Links, K. Fischbach and U.R. Krieger (Eds.): *MMB & DFT 2014, LNCS 8376*, pp. 16–28, 2014 Springer International Publishing Switzerland, ISBN 978-3-319-05358-5
- 2014 Markovich N. M., Distributions of Clusters of Exceedances and Their Applications in Telecommunication Networks, Akritas, M. G., Lahiri, S. N., Politis, Dimitris N. (Eds.), *Topics in Nonparametric Statistics*, Springer, *Proceedings in Mathematics & Statistics Vol. 74*, ISBN 978-1-4939-0569-0, pp. 167–176
- 2016 Markovich N. M., Nonparametric Estimation of Heavy-Tailed Density by the Discrepancy Method, Springer International Publishing Switzerland, Ricardo Cao, González Manteiga, Wenceslao, Romo, Juan (Eds.), *Nonparametric Statistics, Springer Proceedings in Mathematics & Statistics, Vol. 175*, pp 103-116, ISBN 978-3-319-41581-9
- 2018 Markovich N. M., Vaičiulis M. Modification of Moment-Based Tail Index Estimator: Sums versus Maxima, Springer International Publishing Switzerland, Patrice Bertail, Delphine Blanke, Pierre-Andre Cornillon, Eric Matzner-Lober (Eds.) *Springer Proceedings in Mathematics and Statistics, Vol.*, pp. 85-102 DOI: 10.1007/978 – 3 – 319 – 96941 – 1 ISBN 978-3-319-96941-1

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- 2019 Vaičiulis M., Markovich N.M. Class of semi-parametric estimators of heaviness of distribution tail and its applications. Automation and Remote Control, Vol. 80, No. 10 being dedicated to the 100th anniversary of the birth of Ya.Z. Tsyarkin, 1803-1816
- 2019 Markovich N.M., Rodionov I.V. Threshold selection for extremal index estimation // Submitted

In Journals:

- 1989 Markovich N.M., Experimental analysis of nonparametric probability density estimates and of methods for smoothing them, Automation and Remote Control, Vol. 50, No. 7, Part 2, July, pp. 941–948
- 1992 Vapnik, V.N., Markovich N.M., Stefanyuk, A.R., Rate of Convergence in L2 of the Projection Estimator of the Distribution Density, Automation and Remote Control, Vol. 53, No. 5, Part 1, May, pp. 133–143
- 1995 Markovich N.M., Michalski, A.I., Estimation of Health Indicators from Data on Revealed Morbidity, Automation and Remote Control, Vol. 56, No. 7, Part 2, July, pp. 1033–1041
- 1998 Markovich N.M., Regularization of some linear integral equations of population analysis, Automation and Remote Control, Vol. 59, No. 3, pp. 418-431
- 1998 Markovich N.M., Michalski, A.I. and W. Morgenstern, Evaluating of epidemiological indicators of the morbidity by indirect data, Automation and Remote Control, 59:6, pp. 877-884
- 2000 Markovich N.M., Detection of Hormesis by Empirical Data as an Ill-Posed Problem, Automation and Remote Control, Vol. 61, No. 1, Part 2, pp. 133-143
- 2000 Markovitch, N.M., Krieger, U.R., Nonparametric estimation of long-tailed density functions and its application to the analysis of World Wide Web traffic, Performance Evaluation, 42, pp. 205-222
- 2001 Markovitch, N.M., Krieger, U.R., The estimation of heavy-tailed probability density functions and their mixtures, In J. Moreira de Souza et al., eds., Teletraffic engineering in the Internet Era, Teletraffic Science and Engineering, vol. 4, 1113-1126, Elsevier, Amsterdam
- 2002 Markovitch, N.M., Krieger, U.R., Estimating Basic Characteristics of Arrival Processes in Telecommunication Networks by Empirical Data, Telecommunication Systems 20:1,2, pp. 11-31
- 2002 Markovitch, N.M., Krieger, U.R., The estimation of heavy-tailed probability density functions, their mixtures and quantiles, Computer Networks, Vol. 40, Issue 3, pp. 459–474
- 2002 Markovich N.M, Transformed Estimates of Densities of Heavy-Tailed Distributions and Classification, Automation and Remote Control, Vol. 63, No. 4, pp. 627–640
- 2002 Markovich N.M, High Quantiles of Heavy-Tailed Distributions: Their Estimation, Automation and Remote Control, Vol. 63, No. 8, pp. 1263–1279

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- 2004 Maiboroda R.E., Markovich N.M., Estimation of heavy-tailed probability density function with application to Web data. *Computational Statistics*, 19:569–592
- 2004 Markovich N.M., Nonparametric renewal function estimation and smoothing by empirical data. Preprint ETH, Zuerich
- 2005 Markovich N.M., The accuracy of transformed kernel density estimates for a heavy-tailed distribution, *Automation and Remote Control*, Vol. 66, No. 2, pp. 217–232
- 2005 Markovich N.M., High quantile estimation for heavy-tailed distributions. *Performance Evaluation* 62(1-4), 178–192
- 2006 Markovich N.M., Krieger, U.R., Nonparametric estimation of the renewal function by empirical data, *Stochastic Models*, 22:2, 175–199
- 2006 Markovich N.M., Krieger, U.R., Statistical Inspection and Analysis Techniques for Traffic Data Arising from the Internet, HETNETs'04 special journal issue on "Convergent Multi-Service Networks and Next Generation Internet: Performance Modelling and Evaluation", pp.72/1-72/9
- 2009 Markovich N.M., Kilpi, J., Bivariate statistical analysis of TCP-flow sizes and durations, *Annals of Operations Research*, Vol.170, 1, 199-216. DOI 10.1007/s10479-009-0531-6
- 2009 Markovich N.M., Undheim U., Emstad P., Classification of Slice-Based VBR Video Traffic and Estimation of Link Loss by Exceedance. *Computer Networks*. Vol.53, 1137-1153. doi:10.1016/j.comnet.2008.12.020
- 2010 Markovich N.M., Krieger U.R., Statistical Analysis and Modeling of Skype VoIP Flows. *Computer Communications (COMCOM)*, Vol.31, Supplement 1 DOI: 10.1016/j.comcom.2010.04.029
- 2013 Markovich N.M., Quality Assessment of the Packet Transport of Peer-to-Peer Video Traffic in High-Speed Networks. *Performance Evaluation*, 70, pp. 28–44, doi:10.1016/j.peva.2012.10.001
- 2014 Markovich N.M., Modeling clusters of extreme values, *Extremes*, Volume 17, Issue 1, pp. 97–125 DOI 10.1007/s10687-013-0176-3
- 2015 Avrachenkov K., Markovich N. M., Sreedharan J.K. Distribution and Dependence of Extremes in Network Sampling Processes, *Computational Social Networks*, 2:12, p. 1-21, DOI:10.1186/s40649-015-0018-3
- 2016 Markovich N.M., Erratum to: modeling clusters of extreme values, *Extremes*, 19(1), pp. 139–142 DOI 10.1007/s10687-015-0237-x
- 2017 Markovich N.M., Clusters of extremes: modeling and examples, *Extremes* 20, pp. 519–538
- 2017 Markovich N. M. Clustering and hitting times of threshold exceedances and applications. *Int. J. Data Analysis Techniques and Strategies*, Vol. 9, No. 4, 331- 347. 2017
- 2018 Markovich N.M., Rodionov I.V. Asymptotic distributions of discrepancy statistics for extremal index estimation // Submitted
- 2019 Markovich N.M., Rodionov I.V. Maxima and sums of non-stationary random length sequences // Submitted

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- 2019 Vaičiulis M., Markovich N.M. Class of semi-parametric estimators of heaviness of distribution tail and its applications // Automation and Remote Control, Vol. 80, No. 10 being dedicated to the 100th anniversary of the birth of Ya.Z. Tsypkin, 1803-1816

In Preprints:

- 2004 Markovich N.M., Nonparametric renewal function estimation and smoothing by empirical data. Preprint ETH, Zuerich
- 2014 Avrachenkov, K., Markovich N. and Sreedharan, J. K., Distribution and Dependence of Extremes in Network Sampling Processes, Research report, no. 8578, INRIA, Aug., Available at <http://hal.inria.fr/hal-01054929>
- 2017 Markovich N.M., Extremes in Random Graphs Models of Complex Networks. arXiv preprint arXiv:1704.01302

In Conferences Proceedings:

- 1995 Markovich N.M., Michalski, A.I., Morgenstern, W., Estimation of cardiovascular morbidity in risk groups, Proceedings of 2nd International Heart Health Conference, Barcelona, Catalonia, Spain, May-June
- 1996 Markovich N.M., Morgenstern, W., Michalski, A.I, Semi-Markov identification based on the small samples approach, Proceedings of the 10th European Simulation Multiconference, Budapest, Hungary, June 2-6
- 1997 Markovich N.M., Morgenstern, W., Michalski, A.I, Nonparametric estimation of transition rate on empirical data, Proceedings of the 3rd International Conference on Applied Informatics, Eger-Noszvaj, Hungary, August 25-28
- 1998 Markovitch, N.M., Nonparametric estimation of the probability density and its functions by regularization method, Proceedings of the Conference Inverse and Ill-posed Problems, Moscow University, June 16-17
- 1999 Markovitch, N.M., Estimation of heavy-tailed probability density and hazard rate functions and their application in teletraffic theory, Proceedings of the Workshop Heavy tails and queues, Eurandom, The Netherlands, April
- 1999 Markovitch, N.M., Nonparametric estimation of probability density: the restoration of heavy-tailed distribution, Proceedings of the International Conference on Control Problems, Moscow, June 29 - July 2
- 1999 Markovitch, N.M., Nonparametric probability density and hazard rate estimation by the regularization method, Proceedings of the 10th INFORMS Applied Probability Conference University, Ulm, July 26-28
- 1999 Markovitch, N.M., Krieger, U.R., Estimating Basic Characteristics of Arrival Processes in Advanced Packet-Switched Networks by Empirical Data, Proceedings of First IEEE/Popov Workshop on Internet Technologies and Services, pp.70-78. IEEE, New York

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- 2000 Markovitch, N.M., Krieger, U.R., Die Schätzung von Verkehrscharakteristiken in Paketvermittlungsnetzen mit Hilfe von Verkehrsmessungen, Web Proceedings of Workshop IP Netzplanung, IP Netzmanagement und Optimierung, 20.-21. Juli, University of Würzburg
- 2000 Markovitch, N.M., Krieger, U.R., Nonparametric estimation of long-tailed density functions and its application to the analysis of World Wide Web traffic, In Proceedings of the Workshop Mathematical Modelling in Finance and Telecommunication, Nagu/Nauvo, Finland, 18-22 August
- 2000 Markovitch, N.M., Nonparametric estimation of long-tailed distribution density function, In Proceedings of the International Conference System Identification and Control Problems, SICPRO'2000, Moscow, Russia, 26-28 September
- 2000 Markovitch, N.M., Krieger, U.R., Estimation Of The Renewal Function: A Bayesian Approach, In Proceedings ECUMN 2000, Colmar, October
- 2001 Markovitch, N.M., Nonparametric estimation of a heavy-tailed probability density function, In Proceedings of International Symposium Extreme Value Analysis, Theory and Practice, Leuven, August
- 2001 Markovitch, N.M., Krieger, U.R., Non-parametric heavy-tailed density estimation and classification problem, IFAC Workshop Proceedings Adaptation and Learning in Control and Signal Processing, Cernobbio-Como Italy, 29-31 August
- 2002 Markovitch, N.M., High quantile estimation for heavy-tailed distributions, In Proceedings of the International Gnedenko Conference, Kyiv, June 3-7
- 2002 Markovitch, N.M., Measurements analysis in the case of heavy-tailed distributions, Proceeding of International Symposium "Managing and analyzing data streams: towards unifying approaches from mathematical statistics and computer science" 13-15 June, Marburg Germany, pp.37-38
- 2002 Markovitch, N.M., Krieger, U.R., Statistical characterization of mobile user behavior and its application to resource management in next generation networks, In Proceedings of the MASCOTS Workshop on Design and Performance Evaluation of 3G Internet Technologies, Fort Worth, Texas, October 2002, pp. 23-40
- 2003 Markovitch N.M., Estimation principles of heavy-tailed distribution density function, In Proceedings of the II International Conference "System Identification and Control Problems" SICPRO'2003.Moscow, Russia, 29-31 January
- 2003 Markovitch N.M., Retransformed nonparametric density estimators with reduced bias, Proceedings of the International Summer Seminar Stochastic Dynamical Systems, May 30- June 7, Sudac, Crimea, Ukraine, p.54
- 2003 Markovitch N.M., Accuracy of retransformed kernel estimators for heavy-tailed densities, Proceedings of the International Conference Kolmogorov and Contemporary Mathematics, June, Moscow, p.494
- 2003 Markovitch N.M., U.R.Krieger, On-Line Estimation of Heavy-Tailed Traffic Characteristics in Web Data Mining, In Proceedings of 18th International Teletraffic Congress, Berlin, Germany, 31 August – 5 September

- 2003 Markovich N.M., Estimation of heavy-tailed densities by a transformation, Proceedings of the Barcelona Conference on Asymptotic Statistics, 2-6 September, Barcelona, Bellaterra, p.35
- 2005 Markovich N.M., On-line estimation of the tail index for heavy-tailed distributions with application to WWW-traffic, In Proceedings of the 1st Conference on Next Generation Internet Design and Engineering, pp.388-395, IEEE, Piscataway, NJ
- 2005 Markovich N.M., Smoothing of variable bandwidth kernel estimate of heavy-tailed density function, Proceedings of the 4th Conference on Extreme Value Analysis, Probabilistic and Statistical Models and their Applications, Gothenburg, August 15-19, p.60
- 2005 Markovich N.M., Classification of heavy-tailed data as differentiation service tool, Proceedings of Workshop on QoS and Traffic Control. ENS, Paris, France, December
- 2005 Markovich N.M., Estimation of heavy-tailed density functions with application to WWW-traffic, In Proceedings of the 2nd Conference on Next Generation Internet Design and Engineering, pp.208-215, IEEE, Piscataway, NJ
- 2006 Markovich N.M., U.R. Krieger, Statistical Inspection and Analysis Techniques for Traffic Data arising from the Internet." In Proceedings of the HET-NETs '04 2nd International Working Conference on PERFORMANCE MODELLING AND EVALUATION OF HETEROGENEOUS NETWORKS, July 26-28, Ilkley, West Yorkshire, P72/1-P72/9
- 2006 Markovich N.M., Nonparametric Estimation of Heavy-Tailed Density by Dependent and Independent Data of WWW-Traffic, 6th Wuerzburg Workshop on IP: Joint EuroNGI and ITG Workshop on "Visions of Future generation Networks" (EuroView2006), July, 31st-August, 1st
- 2006 Markovich N.M., Estimation of marginal density by dependent data, Proc. Stochastic Performance Models for Resource Allocation in Communication Systems, Amsterdam, 8-10 November, pp.77-80
- 2006 Markovich N.M., Kilpi, J., Bivariate statistical analysis of TCP-flow sizes and durations, Proc. Stochastic Performance Models for Resource Allocation in Communication Systems, Amsterdam, 8-10 November, pp.47-50
- 2007 Markovich N.M. "Renewal function estimation for regularly varying inter-arrival time distribution". Proceedings of the 5th Conference on Extreme Value Analysis, Bern, July 23-27, p.63
- 2008 Markovich N.M., Undheim U., Emstad P., "Slice-Based VBR Video Traffic-Estimation of Link Loss by Exceedance", Proceedings of the 4th International Telecommunication NETworking WorkShop on QoS in Multiservice IP Networks IT-NEWS(QoS-IP 2008), Venezia, Italy February 13-15, pp.112-117
- 2008 Markovich N.M., Load control by arrivals of TCP connections, Proceedings of International conference "System identification and control problems" SICPRO-08, CD, p.1-9

- 2008 Markovich N.M., Nonparametric estimation of dependence and bivariate distribution with application to telecommunication data, Poster on the Stochastic Networks Conference, June 23-28, Ecole Normale Supérieure, Paris
- 2008 Markovich N.M., Dependence detection in Internet data, Proceedings of International Barcelona Conference on Asymptotic Statistics (BAS2008), Centre de Recerca Matemàtica (CRM), Bellaterra, Barcelona, September 1-5, pp.84–85
- 2008 Markovich N.M., Krieger U.R., Statistical Analysis of VoIP Flows Generated by Skype Users, IEEE International workshop on traffic management and traffic engineering for the future Internet, FITraMEn, Porto, Portugal, p.1-6
- 2009 Markovich N.M., Nonparametric estimation of copula with application to Web traffic data, Proceedings of the VIII International conference "System identification and control problems" SICPRO-09, Selected papers, p.35-43, Moscow, January 26-30
- 2009 Markovich N.M., Krieger U.R., Statistical Characterization of QoS Aspects Arising From the Transport of Skype VoIP Flows, IEEE The First International Conference on Evolving Internet (INTERNET 2009), 23-29 August, Cannes/French Riviera. Published IEEE 2009, ISBN 978-0-7695-3748-1/09 DOI 10.1109/Internet 2009.9 pp.9–14
- 2010 Eittenberger P., Krieger U.R., Markovich N.M., Measurement and Analysis of Live-Streamed P2PTV Traffic, T. Czachórski, ed. Performance Modelling and Evaluation of Heterogeneous Networks, Proc. HET-NETs 2010: 7th International conference on Performance Modeling and Evaluation of Heterogeneous Networks, Zakopane, January 14th-16th, pp. 195–212
- 2010 Markovich N.M., Measurement and Analysis of Live-Streamed P2PTV Traffic, T. Czachórski, ed. Performance Modelling and Evaluation of Heterogeneous Networks, Proc. HET-NETs 2010: 7th International conference on Performance Modeling and Evaluation of Heterogeneous Networks, Zakopane, January 14th-16th, pp. 195–212
- 2010 Markovich N.M., Biernacki A., Eittenberger P., Krieger U.R., Integrated Measurement and Analysis of Peer-to-Peer Traffic, Eighth International Conference on Wired/Wireless Internet Communications, June 1-3, Lulea, Sweden, WWIC 2010 In : E. Osipov et al. (Eds.), Proc. WWIC2010, LNCS 6074, pp. 302-314, Springer, Heidelberg
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