

CURRICULUM VITAE

ALEXANDER G. TARTAKOVSKY

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DEGREES

D.Sci. *in Statistics and Control.*

Department of Cybernetics, Moscow Institute of Physics and Technology, Russia, 1990.
Dissertation: *Optimal and Asymptotically Optimal Multihypothesis Sequential Tests for General Non-i.i.d. Models*

Ph.D. *in Statistics and Information Theory.*

Department of Cybernetics, Moscow Institute of Physics and Technology, Russia, 1981.
Dissertation: *Optimal Sequential Methods of Hypothesis Testing and Estimation for General Stochastic Models*

M.S. *in Electrical Engineering with specialization in Radar Systems, Detection Theory, and Telecommunications.*

Department of Electrical Engineering and Flight Systems, Moscow Aviation Institute, Russia, 1978.
Thesis: *Sequential Detection of Objects under Nonstationary and Correlated Observations*

PROFESSIONAL EXPERIENCE

2011–present Professor (Research), Department of Mathematics, University of Southern California.

1997–2010 Adjunct Professor and Research Scientist, Department of Mathematics, University of Southern California.

1997–present Associate Director and Project Director, Center for Applied Mathematical Sciences, University of Southern California.

2006–present Vice President, Argo Science Corp, Rolling Hills Estates, CA.

1994–1996: Visiting Professor, Department of Mathematics, Statistics Division, University of California, Los Angeles.

June–August 1994: Visiting Faculty at the University of North Carolina, Chapel Hill, Department of Statistics, and at the University of Southern California, Center for Applied Mathematical Sciences.

1993–1994: Visiting Professor, Department of Electrical Engineering, Flight Systems Research Center, University of California, Los Angeles.

1990–1993: Professor, Moscow Institute of Physics and Technology, Department of Applied Mathematics and Physics, Russia.

1991–1993: Department Head, Moscow Institute of Technology, Russian Academy of Sciences, Moscow.

1982–1991: Senior Research Scientist, Department of Perspective Investigations, Division of Statistics and Information Systems, Moscow Institute of Technology, Russian Academy of Sciences, Moscow.

AWARDS AND HONORS

2007 Abraham Wald Prize in Sequential Analysis.

Doctor-of-Science Degree from Moscow Institute of Physics and Technology, Russia, 1990.

The Best Young Scientist Awards from the Institute of Radio Technology, Russian Academy of Sciences, 1983, 1984, 1985.

Excellence in Research Award from the Popov Scientific Society, Russia, 1988.

RESEARCH INTERESTS

Summary:

I am a statistician interested in probability theory and applied probability. My research is focused on statistical problems that arise in scientific and engineering applications and require novel probabilistic methods. My theoretical research is mostly in sequential analysis. In early stages, I worked both on sequential estimation and hypothesis testing. Since 1985, I have been working on sequential hypothesis tests (primarily multiple hypothesis tests) and on quickest changepoint detection. I was focused not only on traditional iid models, but also on very general non-iid models for which novel probabilistic techniques were required. A related interest was semi-parametric spatiotemporal image processing methods as well as nonlinear filtering for spatiotemporal hidden Markov models with a variety of applications that include but are not limited to tracking of dim objects in clutter, as well as plan recognition and tracking of malicious activities (gangs, terrorists, etc.). I have also developed an advanced hybrid anomaly–signature intrusion detection system for super-rapid detection of attacks in distributed computer networks based on changepoint detection and spectral signal processing techniques. More recently, I started to work on modeling of and decision making in complex stochastic systems as well as on uncertainly quantification in such systems.

Specific Areas

- **Theoretical and Applied Statistics**
- **Decision Theory**
- **Sequential Analysis and Optimal Stopping:** special emphasis on multi-hypothesis sequential tests for problems with prior uncertainty, nuisance parameters and non-i.i.d. models
- **Change-Point Detection Phenomena:** quickest detection of changes in stochastic processes
- **Adaptive, Minimax and Robust Methods for Overcoming Prior Uncertainty:** emphasis on minimax tests
- **Robust Statistics:** estimation, regression, tests
- **Stochastic Modeling of and Decision-making in Complex Systems:** with applications to detection and tracking of malicious activity in social and sensor networks
- **Pattern Recognition**
- **Speech Recognition and Speaker Identification**
- **Target Detection and Tracking** by active and passive sensors
- **Statistical Image/Signal Processing**
- **Intrusion Detection and Prediction** in large scale computer networks
- **Information Fusion** in distributed networks

TEACHING EXPERIENCE

- ◇ Probability Theory
- ◇ Stochastic Processes
- ◇ Mathematical Statistics

- ◇ Decision Theory
- ◇ Sequential Methods and Optimal Stopping
- ◇ Information Theory
- ◇ Detection and Estimation Theory
- ◇ Signal Processing

MEMBERSHIPS

- ◇ The Institute of Mathematical Statistics (IMS) and Bernoulli Society
- ◇ Society for Industrial and Applied Mathematics (SIAM)
- ◇ The Institute of Electrical and Electronics Engineers (IEEE), Senior Member
- ◇ The International Society of Information Fusion (ISIF)
- ◇ The International Society for Optical Engineering (SPIE)

PROFESSIONAL ACTIVITIES

Director of the program *Professional Master of Science in Mathematical Finance*, University of Southern California (1999–2007).

Member of the SIAM Activity Group on Uncertainty Quantification (2011–present)

Co-organizer of the *Symposium on Stochastic Control and Nonlinear Filtering*, University of Southern California, Los Angeles, California, December 13-15, 1997.

Co-organizer of the *International Conferences on Information Fusion* (Fusion 2000, Fusion 2002, Fusion 2003, Fusion 2006, Fusion 2008), July 2000, 2002, 2003, 2006, 2008.

Organizer and Chair of the *Special Invited Session “Distributed Detection, Classification, and Recognition”*, International Conferences on Information Fusion (Fusion): Fusion 2000; Fusion 2002, Fusion 2003, Fusion 2006, Fusion 2008.

Organizer and Chair of the *Special Invited Session “Change-Point Detection and Nonlinear Filtering Methods: Applications”*, The 56th Session of the International Statistical Institute (ISI), Lisboa, Portugal, 2007.

Organizer of *Special Invited Sessions on Financial Mathematics and Change Detection/Isolation*, First International Workshop on Sequential Methodologies, Auburn, AL, 2007.

Organizer of the Spatio-Temporal Image Processing and Visual Surveillance Workshop, University of Southern California, Los Angeles, CA, 2008.

Organizer of the Sensor Networks and Future Internet Security Workshop, University of Southern California, Los Angeles, CA, May 23, 2007.

Organizer of *Special Invited Session on Interface between Applied Probability and Changepoint Detection Phenomena*, International Workshop on Applied Probability, Compiègne, France, 2008.

Co-organizer of the Second International Workshop on Sequential Methodologies, Troyes, France, 2009.

Co-organizer of the Third International Workshop in Sequential Methodologies, Stanford University, Palo Alto, CA, 2011.

Co-organizer of the Conference on Markov and Semi-Markov Processes and Related Fields, Porto Carras, Greece, 2011.

Co-organizer of the International Workshop on Sequential Methods and Their Applications, Rouen, France, 2012.

Editorial boards/activities:

- ◇ *Associate Editor* of Sequential Analysis.
- ◇ *Associate Editor* of Statistical Methodology.
- ◇ *Editor* of the Journal of Advances in Information Fusion.

- ◇ *Guest Editor* of the Special Issue “Celebrating the Seventy-Fifth Birthday of Albert N. Shiryaev”, *Sequential Analysis*, Vol. 29, 2010.
- ◇ *Guest Editor* of the Special Issue “Selected Papers from IWSM 2011”, *Sequential Analysis*, Vol. 31, 2012.

Reviewing activities:

- ◇ Annals of Statistics
- ◇ Annals of Applied Probability
- ◇ Annals of Applied Statistics
- ◇ Bernoulli
- ◇ Statistics and Probability Letters
- ◇ Sequential Analysis
- ◇ Theory of Probability and Its Applications
- ◇ IEEE Transactions on Information Theory
- ◇ IEEE Transactions on Signal Processing
- ◇ IEEE Transactions on Signal Processing Letters
- ◇ IEEE Transactions on Aerospace and Electronic Systems
- ◇ IEEE Transactions on Systems, Man and Cybernetics
- ◇ Journal of Computer Security
- ◇ Journal of Statistical Planning
- ◇ Journal of Quantitative Finance
- ◇ SIAM Journal on Imaging Sciences (SIIMS)
- ◇ Statistical Methodology
- ◇ Test
- ◇ Automatica
- ◇ EURASIP Journal on Applied Signal Processing
- ◇ Problems of Information Transmission
- ◇ Soviet Journal on Communications, Technology and Electronics
- ◇ Automation and Remote Control
- ◇ Various Conferences, including IEEE ISIT, IEEE Aerospace, SPIE Conferences, International Conferences on Information Fusion, IWSM, IWAP, etc.

Consulting: Provided statistical consulting for a number of companies such as Qualcomm (San Diego, CA), Raytheon (El Segundo, CA), Scientific Systems, Inc. (MA), Physical Optics Corp. (Torrance, CA), Advanced Science and Novel Technology (Torrance, CA), Aegir Systems (Oxnard, CA), Stern Stewart & Co., (New York), among others.

INVITED TALKS

- ◇ Monotone Properties of the First Exit Time of a Markov Process Started at a Quasistationary Distribution, *Probability Seminar*, Departments of Mathematics and Statistics, Columbia University, NY, February 2012.
- ◇ Recent Advances in Quickest Changepoint Detection, *Risk Seminar*, Department of Statistics, Columbia University, NY, February 2012.
- ◇ Adaptive Spatiotemporal Image Processing Techniques with Applications to Remote Sensing, *Scientific and Statistical Computing Seminar*, Departments of Statistics, Mathematics and Computer Science, University of Chicago, September, 2011.
- ◇ Sequential Changepoint Detection: State of the Art, *Statistics Seminar*, Department of Statistics, University of Illinois at Urbana-Champaign, October, 2011.

- ◇ Spatiotemporal Image Processing with Applications to Tracking of Dim Objects in Clutter, *Signal and Image Processing Seminar*, Department of Electrical and Computer Engineering and Coordinated Science Lab, University of Illinois at Urbana-Champaign, October, 2011.
- ◇ Nearly Optimal Change-Point Detection with An Application to Cybersecurity, *The 3rd International Workshop in Sequential Methodologies*, Stanford University, June 2011.
- ◇ Minimax Optimality of the Shiryaev–Roberts Procedure, *The 5th International Workshop on Applied Probability*, Universidad Carlos III de Madrid, Colmenarejo, Spain, July 2010.
- ◇ Sequential Changepoint Detection: State-of-the Art and Open Problems, *INFORMS (Sequential Decision Analysis)*, Austin TX, November 2010.
- ◇ Quickest Changepoint Detection Methods with Applications to Intrusion Detection, *Advanced Receiver Forum*, Qualcomm, San Diego, CA, March 2010.
- ◇ Design and Comparison of Shiryaev–Roberts and CUSUM-Type Change-Point Detection Procedures, *Second International Workshop in Sequential Methodologies (IWSM2009)*, University of Technology of Troyes (UTT), Troyes, France, June 15-17, 2009.
- ◇ Quickest Changepoint Detection: Recent Advances and Open Problems, *NSF Sponsored Workshop in Honor of Professor A. V. Balakrishnan*, University of California at Los Angeles, CA, January 2009.
- ◇ Spatial-Temporal Image Processing Techniques and Applications to Remote Sensing, Department of Mathematics, Stanford University, May 2009.
- ◇ Efficient Numerical Methods for Optimization and Performance Evaluation of Changepoint Detection Procedures, *Probability Seminar*, Department of Probability Theory, Moscow State University, Russia, March 2009.
- ◇ Exact Optimality Property of the Shiryaev–Roberts Procedure for Detecting Changes in Distributions, *Statistics Seminar*, Department of Statistics, University of California at Los Angeles, October 2008.
- ◇ On Optimality of the Shiryaev–Roberts Procedure for Detecting a Change in Distribution, *Probability & Statistics Seminar*, Department of Mathematical Sciences, University of Technology, Sydney, Australia, November 2008.
- ◇ Exact Optimality of the Shiryaev–Roberts Procedure for Detecting Changes in Distributions, *Proceedings of the International Symposium on Information Theory and its Applications (ISITA2008)*, Auckland, New Zealand, 7-10 December, 2008.
- ◇ Quickest Changepoint Detection in Distributed Multisensor Systems under Unknown Parameters, *International Conference on Information Fusion (Fusion'08)*, Köln, Germany, July 2008.
- ◇ Asymptotic Exponentiality of First Exit Times for Recurrent Markov Processes and Applications to Changepoint Detection, *International Workshop on Applied Probability (IWAP08)*, Compiègne, France, July 7-10, 2008.
- ◇ Adaptive Spatial-Temporal Image Processing Techniques and Applications to Clutter Rejection in Remote Sensing, *Spatio-Temporal Image Processing and Visual Surveillance Workshop*, University of Southern California, Los Angeles, CA, May 2, 2008.
- ◇ Asymptotic Optimality in Sequential Quickest Change-Point Detection: Theory and Applications, Princeton University, 2007.
- ◇ Security Challenges in Cyber Physical Networks (with N. Rao), *Sensor Networks and Future Internet Security Workshop*, University of Southern California, Los Angeles, CA, May 23, 2007.
- ◇ Decentralized Quickest Change Detection in Distributed Sensor Systems with Applications to Information Assurance and Counter Terrorism, *The 2007 Army Conference on Applied Statistics*, Houston, TX, October 2007.
- ◇ Quickest Change-Point Detection: Previous Achievements and Open Problems, *International Workshop on Sequential Methodologies*, Auburn, AL, 22-25 July 2007.
- ◇ Quickest Change Detection in Sensor Networks, *International Workshop on Sequential Methodologies*, Auburn, AL, 22-25 July 2007.

- ◇ Asymptotic Optimality in Sequential Hypothesis Testing and Quickest Change-Point Detection for General Continuous-Time Stochastic Processes, *Workshop on Inverse Problems in Stochastic Differential Equations*, University of Southern California, Los Angeles, CA, 22-26 May, 2007.
- ◇ An Asymptotically Optimal Change Detection Strategy under Nontraditional Global False Alarm Probability Constraint, *Institute of Statistical Science, Academia Sinica, The 2007 Taipei International Statistical Symposium and ICSA International Conference*, June 25-27, 2007.
- ◇ Asymptotic Exponentiality of the Distribution of First Exit Times for a Class of Markov Processes with Applications to Change Detection Problems, *Statistics Seminar*, University of California at Los Angeles, December 2006.
- ◇ Performance of Certain Decentralized Distributed Change Detection Procedures, *Proc. 9th International Conference on Information Fusion*, Florence, Italy, 8-10 July 2006.
- ◇ Asymptotic Performance of a Multichart CUSUM Test Under False Alarm Probability Constraint, *44th IEEE Conference on Decision and Control and ECC'05*, Seville, Spain, 2005.
- ◇ Multichart Quickest Detection Tests: Theory and Applications to Network Security and Target Tracking, *Statistics Seminar*, Department of Statistics, The Hebrew University of Jerusalem, Israel, December 2005.
- ◇ Multichannel Quickest Detection Tests with Applications to Network Security, *Probability Seminar*, Department of Probability Theory, Moscow State University, Russia, September 2005.
- ◇ A Nonparametric Multichart CUSUM Test for Rapid Intrusion Detection, *Joint Statistical Meetings*, Minneapolis, MN, 2005.
- ◇ A General Change-Point Detection Theory, *Probability Seminar*, Department of Mathematics, University of California at Irvine, October 2004.
- ◇ Nearly Optimal Change Detection in Multichannel and Distributed Systems, *5th International Conference on Information Fusion*, Annapolis, MD, 8-11 July 2002.
- ◇ An Efficient Adaptive Sequential Procedure for Detecting Targets, *IEEE Aerospace Conference*, 9-16 March 2002, Big Sky, Montana.
- ◇ Quickest Detection of Targets in Multiple-Resolution-Element Systems: Sequential Detection Versus Non-Sequential Detection, *Workshop on Estimation, Tracking, and Fusion: A Tribute to Yaakov Bar-Shalom*, Monterey, CA, 17 May, 2001.
- ◇ Adaptive Algorithms for Clutter Rejection in Infrared Search and Track Systems, *Workshop on Nonlinear Filtering Methods for Tracking*, 21-22 February, 2001, Dayton, OH.
- ◇ Sequential Detection of Targets in Distributed Systems, *SPIE Conference: Signal Processing, Sensor Fusion, and Target Recognition*, 16-18 April 2001, Orlando, FL.
- ◇ Invariant Sequential Detection and Recognition of Targets in Distributed Systems, *4th International Conference on Information Fusion*, 7-10 August 2001, Montreal, Canada.
- ◇ Multihypothesis Sequential Tests, *Cornell Statistics Seminar*, Cornell University, Ithaca, September 2000.

CURRENT AND RECENT RESEARCH PROJECTS

- ◇ Situational Awareness for Social Media: Theories, Models and Algorithms, *supported by the Defense Advanced Research Projects Agency, University of Southern California*.
- ◇ Adaptive Spatiotemporal Image Processing-Based Clutter Suppression and Nonlinear Filtering-Based Track-Before-Detect Techniques for Tracking Closely-Spaced Dim Objects, *supported by the Missile Defense Agency, University of Southern California*.
- ◇ Nonlinear Filtering and Change-point Detection Methods for Course of Action Analysis, *supported by the Defense Threat Reduction Agency, University of Southern California*.
- ◇ Stochastic Prediction for the Design and Management of Interacting Complex Systems, *supported by the National Science Foundation, University of Southern California*.
- ◇ Inferring Structure and Forecasting Dynamics on Evolving Networks, *MURI Project supported by the Air Force Office of Scientific Research, University of Southern California* (joint with UCLA and multiple other universities).

- ◇ Spatio-Temporal Nonlinear Filtering with Applications to Information Assurance and Counter Terrorism, *MURI Project supported by the Army Research Office, University of Southern California* (joint with Brown University, UCLA, University of Illinois at Urbana Champaign, and Colorado State University at Fort Collins).
- ◇ Collaborative Research: Optimal Change-point Detection and Identification Algorithms with Applications, *supported by the National Science Foundation, University of Southern California* (joint with the ECE Department of University of Illinois at Urbana-Champaign).
- ◇ Bayesian Sensor Networks and Optimal Fusion Techniques in Multi-Sensor Distributed Systems with Applications to Counter Terrorism and Information Assurance, *supported by the Office of Naval Research, University of Southern California* (joint with Brown University, Division of Applied Mathematics).
- ◇ Stochastic Modeling and Bayesian Nonlinear Filtering Methods in Pharmacokinetics/Dynamics with Supercomputer, *Joint Project of the Center for Applied Mathematical Sciences and the Laboratory of Applied Pharmacokinetics (supported by the National Institute of Health), University of Southern California*.
- ◇ Spatial-Temporal Clutter Rejection and Scene Stabilization, *supported by the Office of Naval Research, University of Southern California*.
- ◇ Optimal Signal Processing Based on Nonlinear Filtering for Infrared Search and Track (IRST) Systems, *supported by the Office of Naval Research, University of Southern California*.
- ◇ Spatial-Temporal Image Restoration and Scene Stabilization Algorithms for High-Resolution Target Recognition, *supported by the Office of Naval Research, University of Southern California*.
- ◇ Robust Adaptive Spatial-Temporal Algorithms for Clutter Rejection and Scene Stabilization, *supported by the Missile Defense Agency, ADSANTEC*.
- ◇ Image Stabilization and Extended Target Tracking, *supported by Torrey Pines Logic, Inc., University of Southern California*.
- ◇ Decentralized Sequential Detection of Targets in Distributed Systems, *supported by the Office of Naval Research and the Army Research Office, University of Southern California*.
- ◇ Advanced Mathematical Control and Identification Techniques for Autonomic Information Assurance, *supported by the Defense Advanced Research Projects Agency, University of Southern California*.
- ◇ Advanced Statistical Methods for Information Assurance and Defense Against Cyber-Terrorism, *supported by the Office of Naval Research, University of Southern California*.
- ◇ Rapid Detection of Insider Attacks in Distributed Computer Networks, *supported by the ARMY, ADSANTEC*.
- ◇ Scalable Intrusion Detection System for Rapid Global Detection of Network Attacks, *supported by the Department of Energy, ADSANTEC*.
- ◇ Stochastic Partial Differential Equations with Applications to Nonlinear Filtering, *supported by National Science Foundation, University of Southern California*.
- ◇ Nonlinear Filtering and Target Tracking, *supported by the Office of Naval Research, University of Southern California*.
- ◇ Hidden Markov Model Approach for Classification and Prediction of Alzheimer's Disease Subtypes, *Joint project of the Center for Applied Mathematical Sciences and the Alzheimer's Disease Research Center (supported by the National Institute of Health), University of Southern California*.
- ◇ Design of Speech Segmentation and Speaker Recognition Algorithms Based on Extended Hidden Markov Models, Stochastically Deformable Wavelet Descriptor, and Change-Point Analysis, *supported by the National Security Agency, Filimage, Inc. and Aegir Systems, Los Angeles*.
- ◇ Detection and Tracking of Maneuvering Targets and Data Fusion for Reliable Target Identification, *SBIR DOD/ONR project, Filimage, Inc. and Aegir Systems, Los Angeles*.
- ◇ Overcoming Prior Uncertainty by Minimax Methods and Application to Pattern Recognition Problems, *Center for Applied Mathematical Sciences, University of Southern California and Department of Mathematics, University of California at Los Angeles*.

- ◊ Minimal-Time Detection Algorithms for Detecting Critical Regimes in Flight Systems; Optimal Sequential Tests for Nonhomogeneous Correlated Processes and Multiple Composite Hypotheses; Nonlinear Robust Image Filtering and Segmentation. *Supported by NASA, Flight Systems Research Center, Electrical Engineering Department, University of California at Los Angeles and Department of Statistics, University of North Carolina at Chapel Hill.*
- ◊ Very Low Bit-Error-Rate Evaluation and Prediction in Fiber Optic Communication Systems, *SBIR DOD project, Physical Optics Corporation, Torrance, CA.*
- ◊ Quickest Detection of Signal Degradation in Fiber Optic Communication Systems, *Multilink Technology Corporation, Santa Monica, CA.*
- ◊ Robust Nonlinear Regression Methods and Bootstrap for Brand Value Prediction, *Stern Stewart & Co. and Young & Rubicam Inc., New York.*

CURRENT AND RECENT EXTERNAL FUNDING

1. Situational Awareness for Social Media: Theories, Models and Algorithms, DARPA, \$600,000, 12/15/2011-12/14/2015, co-PI (subcontract from ISI).
2. Adaptive Spatiotemporal Image Processing-Based Clutter Suppression and Nonlinear Filtering-Based Track-Before-Detect Techniques for Tracking Closely-Spaced Dim Objects, MDA, \$800,000, 08/31/2011-08/30/2014, PI.
3. Collaborative Research: Optimal Change-point Detection and Identification Algorithms with Applications, NSF, \$269,692, 10/01/2008-09/30/2012, PI.
4. Spacio-Temporal Nonlinear Filtering with Applications to Information Assurance and Counter Terrorism, ARO-MURI, \$1,500,000, 05/01/2006-11/30/2011, PI at USC, Co-PI for the project (joint with Brown).
5. Nonlinear Filtering and Change-point Detection Methods for Course of Action Analysis, Defense Threat Reduction Agency (DTRA), \$1,955,343, 07/01/2010-06/30/2015, PI.
6. Inferring Structure and Forecasting Dynamics on Evolving Networks, AFOSR-MURI, \$540,000, 10/01/2010-09/30/2015, Co-PI (joint with UCLA).
7. Stochastic Prediction for the Design and Management of Interacting Complex Systems, NSF, \$310,000, 11/01/2010-10/30/2012, PI (joint with the Department of Aerospace & Mechanical Engineering, USC).
8. Bayesian Sensor Networks and Optimal Fusion Techniques in Multi-Sensor Distributed Systems with Applications to Counter Terrorism and Information Assurance, Office of Naval Research, \$600,000, FY04-08.

BOOKS AND BOOK CHAPTERS

Note: Some recent publications are available on the web site

<http://www.usc.edu/dept/LAS/CAMS/usr/facmemb/tartakov/>

- [B6] A.G. Tartakovsky, I. Nikoiforov, and M. Basseville, *Sequential Analysis: Hypothesis Testing and Change-Point Detection*, Chapman & Hall/CRC, under contract (expected publication date July 2012).
- [B5] A. Petrov, B.L. Rozovskii, and A.G. Tartakovsky, "Efficient Nonlinear Filtering Methods for Detection of Dim Targets by Passive Systems." In: *Multitarget-Multisensor Tracking: Applications and Advances*, Volume IV (X.R. Li, W.D. Blair, and T. Kirubarajan, Editors). Artech House, Boston (submitted).
- [B4] A.G. Tartakovsky and V. Veeravalli, "Change-Point Detection in Multichannel and Distributed Systems with Applications." In: *Applications of Sequential Methodologies* (N. Mukhopadhyay, S. Datta and S. Chattopadhyay, Eds), Marcel Dekker, Inc., New York, 2004, pp. 331-363.
- [B3] A.G. Tartakovsky, *Sequential Methods in the Theory of Information Systems*. Radio and Communications Publ. House, Moscow, Russia, 1991 (in Russian).

- [B2] A.G. Tartakovsky, “Optimal Sequential Detection of a Signal with Random Appearance Time.” In: *Detection of Changes in Random Processes* (A.V. Balakrishnan, Ed.), Optimization Software, New York, pp. 161-175, 1986.
- [B1] A.G. Tartakovsky, “Asymptotically Optimal Procedures of Target Recognition with Non-Stationary Correlated Observations.” *Complex Radio-Astronomy Systems*, Published by the Institute of Radio Technology Press, Moscow, USSR, 1986 (in Russian).

JOURNAL PUBLICATIONS

- [J57] G. Fellouris and A.G. Tartakovsky, “Nearly Minimax Mixtures Rules for One-sided Sequential Testing.” *Sequential Analysis*, Submitted in 2011. (**Invited Paper**, Anscombe (1952) Commemorative Issue of Sequential Analysis: A Tribute to Francis John Anscombe and Distributions of Stopping Times: Sixty Years of Random Central Limit Theorem).
- [J56] A.S. Polunchenko and A.G. Tartakovsky, “State-of-the-Art in Sequential Change-Point Detection.” *Methodology and Computing in Applied Probability*, 2011 (in press).
- [J55] A.G. Tartakovsky, M. Pollak, and A.S. Polunchenko, “Third-Order Asymptotic Optimality of the Generalized Shiryaev–Roberts Change-point Detection Procedures.” *Theory Probability and Its Applications*, Vol. 56, No. 3, 2011.
- [J54] A. Chen, T. Wittman, A.G. Tartakovsky, and A.L. Bertozzi, “Efficient Boundary Tracking Through Sampling.” *Applied Mathematics Research Express*, Vol. 2, pp. 182–214, 2011.
- [J53] M. Pollak and A.G. Tartakovsky, “On the First Exit Time of a Nonnegative Markov Process Started at a Quasistationary Distribution.” *Journal of Applied Probability*, Vol. 48, No. 2, pp. 589–595, 2011.
- [J52] G.V. Moustakides, A.S. Polunchenko, and A.G. Tartakovsky, “A Numerical Approach to Performance Analysis of Quickest Change-Point Detection Procedures.” *Statistica Sinica*, Vol. 21, No. 2, pp. 571–596, 2011.
- [J51] A.S. Polunchenko and A.G. Tartakovsky, “On Optimality of the Shiryaev–Roberts Procedure for Detecting a Change in Distribution.” *Annals of Statistics*, Vol. 38, No. 6, pp. 3445–3457, 2010.
- [J50] A.G. Tartakovsky and G.V. Moustakides, “Discussion on “Quickest Detection Problems: Fifty Years Later” by A.N. Shiryaev,” *Sequential Analysis*, Vol. 29, No. 4, pp. 386–393, 2010.
- [J49] G.V. Moustakides and A.G. Tartakovsky, “A Note on “The Optimal Stopping Time for Detecting Changes in Discrete Time Markov Processes” by Han and Tsung.” *Sequential Analysis*, Vol. 29, No. 4, pp. 483–486, 2010.
- [J48] A.G. Tartakovsky, R. Liptser, and A. Novikov, “Celebrating Albert Shiryaev’s 75th Anniversary.” *Sequential Analysis*, Vol. 29, No. 2, pp. 107–111, 2010. Special issue “Celebrating Seventy-Fifth Birthday of Albert N. Shiryaev”, Guest Editor A.G. Tartakovsky.
- [J47] R. Liptser and A.G. Tartakovsky, “From Disorder Detection to Optimal Stopping and Mathematical Finance.” *Sequential Analysis*, Vol. 29, No. 2, pp. 112–124, 2010. Special issue “Celebrating Seventy-Fifth Birthday of Albert N. Shiryaev”, Guest Editor A.G. Tartakovsky.
- [J46] A.G. Tartakovsky and G.V. Moustakides, “State-of-the-Art in Bayesian Change-point Detection.” *Sequential Analysis*, Vol. 29, No. 2, pp. 125–145, 2010. Special issue “Celebrating Seventy-Fifth Birthday of Albert N. Shiryaev”, Guest Editor A.G. Tartakovsky.
- [J45] G.V. Moustakides, A.S. Polunchenko, and A.G. Tartakovsky, “Numerical Comparison of CUSUM and Shiryaev-Roberts Procedures for Detecting Changes in Distributions.” *Communications in Statistics – Theory and Methods: S. Zacks Festschrift*, vol. 38, pp. 3225-3239, 2009. (**Invited Paper**).

- [J44] A.G. Tartakovsky, “Discussion on “Optimal Sequential Surveillance for Finance, Public Health, and Other Areas” by Marianne Frisén.” *Sequential Analysis*, vol. 28, No. 3, pp. 365-371, 2009.
- [J43] M. Pollak and A.G. Tartakovsky, “Optimality Properties of the Shiryaev-Roberts Procedure.” *Statistica Sinica*, vol. 19, No. 4, pp. 1729-1739, 2009.
- [J42] A.G. Tartakovsky, Discussion on “Is Average Run Length to False Alarm Always an Informative Criterion?” by Yajun Mei, *Sequential Analysis*, vol. 27, no. 4, pp. 396-405, 2008.
- [J41] A.G. Tartakovsky and V.V. Veeravalli, “Asymptotically Optimal Quickest Change Detection in Distributed Sensor Systems,” *Sequential Analysis*, vol. 27, no. 4, pp. 441-475, 2008.
- [J40] A.G. Tartakovsky and J. Brown, “Adaptive Spatial-Temporal Filtering Methods for Clutter Removal and Target Tracking,” *IEEE Transactions on Aerospace and Electronic Systems*, vol. 44, no. 4, pp. 1522-1537, 2008.
- [J39] M. Pollak and A.G. Tartakovsky, “Asymptotic Exponentiality of the Distribution of First Exit Times for a Class of Markov Processes with Applications to Quickest Change Detection.” *Teoriya Veroyatnostej i ee Primeneniya*, vol. 53, issue 3, pp. 473-499, 2008; English translation: *Theory of Probability and Its Applications*, vol. 53, No. 3, pp. 430-442, 2009, (SIAM).
- [J38] A.G. Tartakovsky, “Asymptotic Optimality in Bayesian Change-Point Detection Problems under Global False Alarm Probability Constraint.” *Teoriya Veroyatnostej i ee Primeneniya*, vol. 53, issue 3, pp. 473-515, 2008; English translation: *Theory of Probability and Its Applications*, vol. 53, No. 3, pp. 443-466, 2009, (SIAM).
- [J37] A.G. Tartakovsky, “Multidecision Quickest Changepoint Detection: Previous Achievements and Open Problems.” *Sequential Analysis*, vol. 27, no. 2, pp. 201-231, 2008.
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PERSONAL DATA

US Citizen

Married, 3 children