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PROFESSIONAL WORK

- 2005–to date *Managing Partner and Chief Scientist*
Mitek Analytics LLC, Palo Alto, CA
- 2002–to date *Consulting Professor*
Information Systems Lab, Dept. of Electrical Engineering, Stanford University
- 1999–2005 *Senior Staff Scientist*
Honeywell Laboratories, San Jose, CA
- 1996–2001 *Adjunct Professor*
Dept. of ECE, Univ. of British Columbia, Vancouver, B.C., Canada
- 1995–1998 *Senior Control Engineer, Product Manager*
Honeywell-Measurex, North Vancouver, B.C., Canada
- 1995–1999 *Consultant for Canadian Space Agency, St.-Hubert, Quebec, Canada*
- 1992–1995 *Senior Research Scientist, Canada Research Fellow*
Robotics and Automation Laboratory, University of Toronto, Canada
- 1991–1992 *Visiting Scientist (Alexander von Humboldt Award)*
Munich University of Technology, Germany
- 1982–1991 *Research Scientist, Research Engineer*
Inst. for Probl. of Information Transmission, USSR Academy of Sciences, Moscow

CURRENT RESEARCH INTERESTS

Systems health management: diagnostics, prognostics, operations research
Control systems and applications: aerospace GN&C, process control, other
Signal processing: estimation, system identification, pattern recognition
Multidimensional systems: control, signal, and image processing

EDUCATION

- 1986 *Ph.D. in Controls*
Department of Mechanics and Mathematics, Moscow (Lomonosov) University
- 1976–1982 *M.Sc. with Highest Honors (Flight Dynamics and Control)*
Department of Aerospace Engineering, Moscow Institute of Physics and Technology

AWARDS AND HONORS

- 2006 Elected Fellow of IEEE from Control Systems Society
- 2006 IEEE CCA Best Student Paper Award (co-author/supervisor), IEEE CSS
- 2004 Transactions on Control Systems Technology Outstanding Paper Award, IEEE CSS
- 2002 Control Systems Technology Award of the IEEE Control Systems Society
- 1999, 2004 IEEE CDC Best Student Paper Award Finalist (co-author/supervisor), IEEE CSS
- 1990 Alexander von Humboldt International Research Fellowship, Bonn, Germany
- 1987 The USSR Academy of Sciences Award for Young Scientist Achievements in the Fields of Mathematics, Computing, Mechanics, and Control, Moscow, Russia

IEEE CONTROL SYSTEM SOCIETY SERVICE

- 2001–2008 Associate Editor, IEEE Transactions on Control Systems Technology
- 2007, 08, 09 ACC Program Committee
- 2005 IEEE Tran. on Control Systems Technology Outstanding Paper Award Committee
- 2003–present IEEE CSS Technical Committee of Aerospace Control
- 1995–present IEEE CSS Technical Committee of Intelligent Control
- 1998–2003 IEEE CSS Technical Committee of Industrial Process Control
- 2002–2003 Guest Editor, Special Issue on Industrial Distributed System Control, IEEE Transactions on Control Systems Technology
- 2004 IEEE CCA/ISIC/CACSD Organizing Committee
- 2001 Member of Industrial Review Board for Army Research Lab MURI
- 1997–2002 Associate Editor, Conference Editorial Board
- 2002 IEEE CDC Program Committee
- 2001 IEEE CDC Organizing Committee
- 2001, 1996 IEEE ISIC Program Committee

PROFESSIONAL SOCIETIES

- Registered Professional Engineer in Ontario
- IEEE Fellow
- AIAA, SPIE (past), ASME (past), SAE (past)

PUBLICATIONS

- 150 technical papers in refereed journals and conference proceedings
- One book published in English and Russian
- Fifteen patents received or pending

TEACHING

- 2003–2005 Control Engineering in Industry, Stanford Univ., EE
- 1997 Control Systems, Univ. of British Columbia, ECE
- 1995 Advanced Robot Mechanics and Control, Univ. of Toronto, ME
- 1993–1995 Control, Univ. of Toronto, Continuing Education
- 1978–1982 Physics, Mathematically Gifted Student Program, High School #91, Moscow, Russia

GRADUATE STUDENTS SUPERVISED

- 2007–to date Argyris Zymnis (Ph.D.), Stanford EE.
- 2003–2006 Sikandar Samar (Ph.D.), Stanford AA/EE. Presently with Credit Suisse.
- 1999–2001 Leonardo Kammer (Postdoc), UBC ECE. Presently with GE Global Research.
- 1997–2000 Greg Stewart (Ph.D.), UBC ECE. Presently with Honeywell.
- 1997–1998 Ming Zhang (M.A.Sc.), UBC ECE.
- 1988–1990 One Ph.D. and one MS student, Moscow University, Mech Math.

PUBLICATIONS

Journal papers

- [1] Kim, S.-J., Koh, K., Boyd, S., and Gorinevsky, D. (2009) “ l_1 trend filtering,” *SIAM Review*, Vol. 51, No. 2, pp. 000-000
- [2] Gorinevsky, D., Kim, S.-J., Beard, S., Boyd, S., and Gordon, G. (2009) “Optimal estimation of deterioration from diagnostic image sequence,” *IEEE Trans. on Signal Processing*, Vol. 57, No. 3, pp. 1030-1043.
- [3] Zymnis, A., Boyd, S., and Gorinevsky, D. (2008) “Relaxed maximum a posteriori fault identification,” *Signal Processing*, Vol. 89, No. 6, pp. 989-999
- [4] Kim, S.-J., Koh, K., Lustig, M., Boyd, S., and Gorinevsky, D., (2008) “A method for large-scale l_1 -regularized least squares problems with applications in signal processing and statistics,” *IEEE Journ. of Selected Topics in Signal Processing*, Vol. 1, No. 4, pp. 606–617.
- [5] Gorinevsky, D., Boyd, S., and Stein, G. (2008) “Design of low-bandwidth spatially distributed feedback,” *IEEE Trans. on Automatic Control*, Vol. 53, No. 2, pp. 257–272.
- [6] Gorinevsky, D. and Boyd, S. (2006) “Optimization-based design and implementation of multi-dimensional zero-phase IIR filters,” *IEEE Trans. on Circuits and Systems - I*, Vol. 53, No. 2, pp. 372-383.
- [7] Stein, G. and Gorinevsky, D. (2005) “Design of surface shape control for large two-dimensional array,” *IEEE Trans. on Control Systems Technology*, Vol. 13, No. 3, pp. 422–433.
- [8] Gorinevsky, D. and Farber, G. (2004) “System analysis of power transients in advanced WDM networks,” *IEEE/OSA Journ. of Lightwave Technology*, Vol. 22, No. 10, pp. 2245–2255.
- [9] Gorinevsky, D. and Stein, G. (2003) “Structured uncertainty analysis of robust stability for multidimensional array systems,” *IEEE Trans. on Automatic Control*, Vol. 48, No. 8, pp. 1557–1568.
- [10] Kammer, L.C., Gorinevsky, D., and Dumont, G.A. (2003) “Semi-intrusive multivariable model invalidation,” *Automatica*, Vol. 39, pp. 1461–1467.
- [11] Stewart, G.E., Gorinevsky, D., and Dumont, G.A. (2003) “Feedback controller design for a spatially-distributed system: The paper machine problem,” *IEEE Trans. on Control Systems Technology*, Vol. 11, No. 5, pp. 612–628.
- [12] Gorinevsky, D. and Gheorghe, C. (2003) “Identification tool for cross-directional processes,” *IEEE Trans. on Control Systems Technology*, Vol. 11, No. 5, pp. 629–640.
- [13] Gorinevsky, D., Cook, J., and Vukovich, G. (2003) “Nonlinear predictive control of transients in automotive VCT engine using nonlinear parametric approximation,” *ASME Journ. of Dynam. Systems Meas. and Control*, Vol. 125, No. 3, pp. 429–438.
- [14] Stewart, G.E., Gorinevsky, D., and Dumont, G.A. (2003) “Two-dimensional loop shaping,” *Automatica*, Vol. 39, No. 5, pp. 779-792.
- [15] Gorinevsky, D. (2002) “Loop-shaping for iterative control of batch processes,” *IEEE Control Systems Magazine*, Vol. 22, No. 6, pp. 55–65.
- [16] Stewart, G.E., Gorinevsky, D., Dumont, G.A., Gheorghe, C., and Backstroem, J.U. (2001) “The role of model uncertainty in cross-directional control systems,” *Pulp and Paper Canada*, Vol. 102, No. 10, pp. T273–T278.

- [17] Gorinevsky, D. and Heaven, M. (2001) "Performance-optimized applied identification of separable distributed-parameter processes," *IEEE Trans. on Automatic Control*, Vol. 46, No. 10, pp. 1584–1589.
- [18] Gorinevsky, D. and Vukovich, G. (2001) "Model-based update in task-level feedforward control using on-line approximation," *Automatica*, Vol. 37, No. 3, pp. 391–400.
- [19] Gorinevsky, D., Heaven, M., and Vyse, B. (2000) "Performance analysis of cross-directional process control," *IEEE Trans. on Control Systems Technology*, Vol. 8, No. 4, pp. 589–600.
- [20] Popovic, M.R., Gorinevsky, D.M., and Goldenberg, A.A. (2000) "High-precision positioning of a mechanism with nonlinear friction using a fuzzy logic pulse controller," *IEEE Trans. on Control Systems Technology*, Vol. 8, No. 1, pp. 151–158.
- [21] Gorinevsky, D., Vukovich, G. (1998) "Control of flexible spacecraft using nonlinear approximation of input shape dependence on reorientation maneuver parameters," *Control Engineering Practice*, Vol. 5, No. 2, p. 1661–1671.
- [22] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M. (1998) "Integrated tool for intelligent identification of CD process alignment shrinkage and dynamics," *Pulp and Paper Canada*, Vol. 99, No. 2, pp. 40–60.
- [23] Gorinevsky, D. and Vukovich, G. (1998) "Nonlinear input shaping control of flexible spacecraft reorientation maneuver," *AIAA Journ. of Guidance, Control, and Dynamics*, Vol. 21, No. 2, pp. 264–270.
- [24] Gorinevsky, D. (1997) "An approach to parametric optimization of nonlinear system and application to task-level learning control," *IEEE Trans. on Automatic Control*, Vol. 42, No. 7, pp. 912–927.
- [25] Gorinevsky, D., Torfs, D, and Goldenberg, A.A. (1997) "Learning approximation of feedforward control dependence on task parameters," *IEEE Trans. on Robotics and Automation*, Vol. 13, No. 4, pp. 567–581.
- [26] Gorinevsky, D., Vyse, B., Hagart-Alexander, A., and Heaven, M. (1997) "Performance analysis of cross-directional control using multivariable and spectral models," *Pulp and Paper Canada*, Vol. 98, No. 7, pp.44–47.
- [27] Gorinevsky, D.M., Heaven, M. et al. (1997) "New algorithms for intelligent identification of paper alignment and nonlinear shrinkage," *Pulp and Paper Canada*, Vol. 98, No. 7, pp.76–81.
- [28] Heaven, M., Gorinevsky, D., Hagart-Alexander, C., and Vyse, B. (1997) "Application of the model-based tuning and analysis tools to paper machine control," *Pulp and Paper Canada*, Vol. 98, No. 7, pp. 54–58.
- [29] Gorinevsky, D. (1997) "Sampled-data indirect adaptive control of bioreactor using affine Radial Basis Function network approximation," *Trans. ASME. Journ. Dynam. Syst. Meas. and Control*, Vol. 119, No. 1
- [30] Gorinevsky, D. and Feldkamp, L. (1996) "RBF network feedforward compensation of load disturbance in idle speed control," *IEEE Control System Magazine*, Vol. 16, No. 6, pp. 18–27.
- [31] Gorinevsky, D., Kapitanovsky, A., and Goldenberg, A.A. (1996) "Neural network architecture for trajectory generation and control of automated car parking," *IEEE Trans. on Control Systems Technology*, Vol.4, No.1, pp.50–56.
- [32] Gorinevsky, D., Kapitanovsky A., and Goldenberg A.A. (1995) "Radial Basis Function network architecture for nonholonomic motion planning and control of free-flying manipulators," *IEEE Trans. on Robotics and Automation*, Vol. 12, No. 3, pp. 491–496.

- [33] Gorinevsky, D. (1995) “On the persistency of excitation in Radial Basis Function network identification of nonlinear systems,” *IEEE Trans. on Neural Networks*, Vol.4, No.5, pp.1237-1244.
- [34] Gorinevsky, D., Kapitanovsky, A., and Goldenberg, A.A. (1994) “AUTOPASS: Automatic parking support system,” *Trans. of SAE. Journ. Passenger Cars*, Vol.103, Sect. 6, pp.1397-1401.
- [35] Gorinevsky, D.M., and Connolly, T.H. (1994) “Comparison of some neural network and scattered data approximations: The inverse manipulator kinematics example,” *Neural Computation*, Vol. 6, No. 3, pp. 519-540.
- [36] Gorinevsky, D.M. (1993) “Modeling of direct motor program learning in fast human arm motions,” *Biological Cybernetics*, Vol. 69, No. 3, pp. 219-228.
- [37] Gorinevsky, D.M. (1993) “Galerkin method in control of distributed flexible systems,” *Computer Methods in Applied Mechanics and Engineering*, Vol. 109, pp. 107-128.
- [38] Gorinevsky, D.M. (1992) “Experiments in direct learning of feedforward control for manipulator path tracking,” *Robotersysteme*, Vol. 8, pp. 139-147.
- [39] Gorinevsky, D.M., Lensky, A.V., and Sabitov, E.I. (1991) “Control of flexible link manipulator with gear-train,” *Journ. of Robotic Systems*, Vol. 8, No. 5, pp. 659-677.
- [40] Gorinevsky, D.M., and Shneider, A.Yu. (1990) “Force control in locomotion of legged vehicles over rigid and soft surfaces,” *Intern. Journ. of Robotics Research*, Vol. 9, No. 2, pp. 4-23.

Books

- [B1] Gorinevsky, D.M., Formalsky, A.M., and Shneider, A.Yu. *Force Control of Robotics Systems*, CRC Press, Boca-Raton, FL, 1997 (Russian edition: Moscow, Nauka, 1994)

Book Chapters

- [BC1] Gorinevsky, D. “Radial Basis Function network approximation and learning in task-dependent feedforward control of nonlinear dynamical systems,” in *Neural Network Systems Techniques and Applications, Optimization Techniques*, vol. 2, ed. C.T.Leondes, Academic Press, San Diego, CA, 1998, pp. 353-395
- [BC2] Popovic, M. R., Gorinevsky, D., and Goldenberg A.A., “Accurate Positioning of Devices with Nonlinear Friction Using Fuzzy Logic Pulse Controller,” in *Lecture Notes in Control and Information Sciences 223 - Experimental Robotics IV, The 4th International Symposium*, Eds. O. Khatib and J. K. Salisbury, Springer, 1997, pp. 331-342.

Conference Papers, Reviewed and Published in Full

- [1] Zymnis, A., Boyd, S. and Gorinevsky, D., “Mixed linear system estimation and identification,” *IEEE Conf. on Decision and Control*, Shanghai, China, December 2009 (submitted)
- [2] Gorinevsky, D., Boyd, S. and Poll, S., “Estimation of faults in DC electrical power system,” *American Control Conf.*, St. Louis, MO, June 2009
- [3] Zymnis, A., Boyd, S. and Gorinevsky, D., “Mixed state estimation for a linear gaussian markov model,” *IEEE Conf. on Decision and Control*, Cancun, Mexico, December 2008
- [4] Gorinevsky, D., “Efficient filtering using monotonic walk model,” *American Control Conf.*, Seattle, WA, June 2008
- [5] Gorinevsky, D., Hoffman, G., Shmakova, M., Mah, R., Cryan, S., and Mitchell, J., “Fault tolerance of relative navigation sensing in docking approach of spacecraft,” *IEEE Aerospace*, Big Sky, MT, March 2008
- [6] Gorinevsky, D., Kim, S.-J., Boyd, S., Beard, S., Gordon, G., and Chang, F.-K. “Optimal estimation of accumulating damage trend from a series of SHM images,” *Intern. Workshop on Structural Health Monitoring*, Stanford University, Stanford, CA, September 11-13, 2007
- [7] Hoffmann, G.M., Gorinevsky, D., Mah, R.W., Tomlin, C.J., and Mitchell, J.D. “Fault tolerant relative navigation using inertial and relative sensors,” *AIAA Guidance, Navigation, and Control Conf.*, August 2007, Hilton Head, SC
- [8] Gorinevsky, D., Mah, R.W. , and Timucin, D., “Early detection of solid rocket motor failures for safe crew launch abort,” *AIAA Guidance, Navigation, and Control Conf.*, August 2007, Hilton Head, SC
- [9] Samar, S., Boyd, S., and Gorinevsky, D. “Distributed estimation via decomposition methods,” *European Control Conference*, Island of Kos, Greece, July 2007.
- [10] Gorinevsky, D. “Optimal estimate of monotonic trend with sparse jumps,” *American Control Conf.*, New York, NY, July 2007
- [11] Samar, S., Gorinevsky, D., and Boyd, S. “Embedded Estimation of Fault Parameters in an Unmanned Aerial Vehicle,” *IEEE Conf. on Control Applications*, Munich, Germany, October 2006. (2006 IEEE CCA Best Student Paper Award)
- [12] Gorinevsky, D. and Gordon, G. “Spatio-temporal filter for structural health monitoring,” *American Control Conf.*, Minneapolis, MN, June 2006
- [13] Samar, S., Gorinevsky, D., and Boyd, S. “Model predictive estimation of evolving faults,” *American Control Conf.*, Minneapolis, MN, June 2006
- [14] Samar, S., Gorinevsky, D., and Boyd, S. “Likelihood bounds for constrained estimation with uncertainty,” *IEEE Conf. on Decision and Control and ECC’05*, Seville, Spain, December 2005.
- [15] Gorinevsky, D. “Feedback loop design and analysis for iterative localized image deblurring,” *IEEE Conf. on Decision and Control and ECC’05*, Seville, Spain, December 2005.

- [16] Gorinevsky, D., Gordon, G.A., Beard, S., Kumar, A., and Chang, F.-K. "Design of integrated SHM system for commercial aircraft applications," *Intern. Workshop on Structural Health Monitoring*, Stanford, CA, September 2005.
- [17] Gorinevsky, D., Samar, S., Bain, J., and Aaseng, G. "Integrated diagnostics of rocket flight control," *IEEE Aerospace*, Big Sky, MN, March 2005.
- [18] Samar, S., Gorinevsky, D., and Boyd, S. "Moving horizon filter for monotonic trends," *IEEE Conf. on Decision and Control*, Paradise Island, Bahamas, December 2004.
- [19] Ganguli, S., Deo, S., and Gorinevsky, D. "Parametric fault modeling and diagnostics of a turbofan engine," *IEEE Conf. on Control Applications*, pp. 223–228, Taipei, Taiwan, September 2004.
- [20] Gorinevsky, D. "Monotonic regression filters for trending gradual deterioration faults," *American Control Conf.*, pp. 5394–5399, Boston, MA, June 2004.
- [21] Stein, G. and Gorinevsky, D. "Design of surface shape control for large two-dimensional array," *IEEE Conf. on Decision and Control*, pp. 1327–1332, Lahaina, HI, December 2003.
- [22] Gorinevsky, D., Boyd, S., and Stein, G. "Optimization-based tuning of low-bandwidth control in spatially distributed systems," *American Control Conf.*, Vol. 3, pp. 2658–2663, Denver, CO, June 2003.
- [23] Gorinevsky, D., Mylaraswamy, D., and Nwadiogbu, E. "Model-based diagnostics for small-scale turbomachines," *IEEE Conf. on Decision and Control*, Vol. 4, pp. 4784–4789, Las Vegas, NV, December 2002
- [24] Gorinevsky, D., Dittmar, K., Mylaraswamy, D., and Nwadiogbu, E. "Model-based diagnostics for an aircraft auxiliary power unit," *IEEE Conf. on Control Applications*, Vol. 1, pp. 215–220, Glasgow, Scotland, September 2002.
- [25] Gorinevsky, D. and Hyde, T.T. "Adaptive membrane for large lightweight space telescopes," *SPIE Astronomical Telescopes and Instrumentation*, Waikoloa, HI - August, 2002. SPIE Paper # 4849-44. *Proceedings of SPIE - The International Society for Optical Engineering*, Vol. 4849, 2002, pp.330–338
- [26] Gorinevsky, D. and Farber, G. "System analysis of power transients in advanced WDM networks," *SPIE Photonics West*, San Jose, CA, January 2002. SPIE Paper # 4653-06. *Proceedings of SPIE - The International Society for Optical Engineering*, Vol. 4653, 2002, pp.27–35.
- [27] Samad, T., Gorinevsky, D., and Stoffelen, F. "Dynamic multiresolution route optimization for autonomous aircraft," *IEEE ISIC*, 2001, p.13-18, Mexico City, Mexico
- [28] Kammer, L.C., Gorinevsky, D., and Dumont, G.A., "Semi-intrusive multivariable model invalidation", *European Control Conference*, Porto, Portugal, 2001
- [29] Gorinevsky, D., Hyde, T., and Cabuz, C. "Distributed shape control of lightweight space reflector structure," *IEEE Conf. on Decision and Control*, Orlando, FL, December 2001.
- [30] Gorinevsky, D., Hyde, T., and Cabuz, C. "Distributed localized shape control of gossamer space structures," *AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Seattle, WA, Apr. 16-19, 2001. AIAA Paper 2001-1197

- [31] Gorinevsky, D. and Stein G., “Structured uncertainty analysis of spatially distributed paper machine process control,” *American Control Conf.*, pp. 2225–2230, Arlington, VA, July 2001.
- [32] Stewart, G.E., Baker, P., Gorinevsky, D.M., and Dumont, G.A., “An experimental demonstration of recent results for spatially distributed control systems,” *American Control Conf.*, Vol. 3 , pp. 2216–2221, Arlington, VA, July 2001.
- [33] Gorinevsky, D., and Mylaraswamy, D., “Designing model-based fault estimator for a separation column,” *American Control Conf.*, Vol. 2, pp. 1765–1770, Arlington, VA, July 2001.
- [34] Gorinevsky, D., and Stein G., “Structured uncertainty analysis of robust stability for spatially distributed systems,” *IEEE Conference on Decision and Control*, Vol. 4, pp. 3757–3762, Sydney, Australia, December 2000.
- [35] Duncan, S., Dumont, G.A., and Gorinevsky, D. “Performance monitoring for cross-directional control systems,” *Control Systems 2000*, pp. 173–177, Victoria, BC, May 2000.
- [36] Stewart, G.E., Gorinevsky, D., Dumont, G.A., Gheorghe, C., and Backstroem, J.U. “The role of model uncertainty in cross-directional control systems,” *Control Systems 2000*, pp. 337–345, Victoria, BC, May 2000.
- [37] Gorinevsky, D., and Stein G., “Uncertainty models for control of distributed actuator and sensor arrays,” SPIE Paper #3984-50, *SPIE 7th Annual Intern. Symposium on Smart Structures and Materials*, March 2000, Newport Beach, CA. *Proceedings of SPIE - The Intern. Society for Optical Engineering*, Vol. 3984, 2000, pp. 415–424
- [38] Stewart, G.E., Gorinevsky, D., and Dumont, G.A., “ H_2 loopshaping controller design for spatially distributed systems,” *IEEE Conf. on Decision and Control*, Vol. 1, pp. 203–208, Phoenix, AZ, December 1999.
- [39] Fenu, G., Gorinevsky, D., and Parisini, T., “Nonparametric kernel smoothing and FIR filtering for model-free symptom generation,” *IEEE Conf. on Decision and Control*, Vol. 5, pp. 4996–5001, Phoenix, AZ, December 1999.
- [40] Gorinevsky, D., “Distributed system loopshaping design of iterative control for batch processes,” *IEEE Conf. on Decision and Control*, pp. 203–208, Phoenix, AZ, December 1999
- [41] Stewart, G.E., Gorinevsky, D.M., and Dumont, G.A., “Spatial loopshaping tuning for consistency profile control,” *IEEE Advanced Process Control Applications for Industry Workshop*, pp. 50–57, Vancouver, Canada, April 1999.
- [42] Stewart, G.E., Gorinevsky, D.M., and Dumont, G.A., “Spatial loopshaping: A case study on cross-directional profile control,” *American Control Conf.*, pp. 3098–3103, San Diego, CA, June 1999
- [43] Duncan, S.R., Dumont, G.A., and Gorinevsky, D.M. “Evaluating the performance of cross-directional control systems,” *American Control Conf.*, San Diego, CA, June 1999
- [44] Gorinevsky, D., Cook, J., Feldkamp, L., and Vukovich, G. “Predictive design of linear feedback/feedforward controller for automotive VCT engine,” *American Control Conf.*, San Diego, CA, June 1999

- [45] Gorinevsky, D., Heaven, M., and Gheorghie, C. (1998) "High-performance identification of cross-directional processes," *Control Systems '98*, pp. 347–354, Porvoo, Finland, Sept. 1998
- [46] Samad, T., Gorinevsky, D., et al "Neural network technology for tuning process control systems," *Control Systems '98*, Porvoo, Finland, Sept. 1998
- [47] Stewart G.E., Gorinevsky, D., and Dumont G.A (1998) "Optimal tuning for robust cross-directional control of paper machines," *Control Systems '98*, pp. 314–321, Porvoo, Finland, Sept.1998
- [48] Zhang M., Gorinevsky, D., and Dumont G.A "Tuning feedback controller of paper machine for optimal disturbance rejection," *Control Systems'98*, pp. 220–227, Porvoo, Finland, Sept. 1998.
- [49] Stewart, G.E., Gorinevsky, D., and Dumont G. "Robust GMV Cross Directional Control of Paper Machines," *American Control Conf.*, pp. 3002-3006, Philadelphia, PA, June 1997.
- [50] Gorinevsky, D. and Heaven, M. "Performance-optimized identification of cross-directional control processes," *IEEE Conf. on Decision and Control*, San-Diego, CA, Dec. 1997, pp. 1872–1877.
- [51] Gorinevsky, D. and Vukovich, G. "Robust convergence of learning update in task-dependent feedforward control," *IEEE Conf. on Decision and Control*, pp. 4708–4713, San-Diego, CA, December 1997.
- [52] Gorinevsky, D.M. and Heaven, M. "Automated identification of actuator mapping in cross-directional control of paper machine," *American Control Conf.*, pp. 3400–3404, Albuquerque, NM, June 1997.
- [53] Gorinevsky, D.M. "On regularized feedback update of distributed-parameter systems in control and nonlinear estimation applications," *American Control Conf.*, pp. 1823–1827, Albuquerque, NM, June 1997.
- [54] Heaven, M., Gorinevsky, D.M., Sung, C., and Kean, M. "Multivariable identification of paper machine cross-directional process using an automated tool," *1997 Dynamic Modeling and Control Applications for Industry Workshop of IEEE Industrial Applications Society*, pp. 56–61, Vancouver, Canada, May 1997.
- [55] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M. "Advanced on-line automated identification tool for mapped and multivariable cross-directional control," *XIV IMEKO World Congress/CD Symposium*, pp. 162-167, Finland, June 1997.
- [56] Gorinevsky, D.M., Heaven, M., Sung, C., and Kean, M. "Integrated tool for intelligent identification of CD process alignment shrinkage and dynamics," *83rd Annual Meeting, Technical Section CPPA*, January 1997, pp. B273-B279
- [57] Gorinevsky, D.M., Vyse, B., and Heaven, M. "Analysis of cross-directional control performance using multivariable and spectral models," *IEEE Conf. on Control Applications*, Dearborn, MI, September 1996.
- [58] Gorinevsky, D., and Vukovich G. "Nonlinear input shaping control of flexible spacecraft re-orientation maneuver," *IEEE Conf. on Control Applications*, Dearborn, MI, September 1996.

- [59] Gorinevsky, D., and Feldkamp, L. "On-line optimization of RBF network feedforward compensation for load disturbance in idle speed control of automotive engine," *IEEE Conf. on Control Applications*, Dearborn, MI, September 1996.
- [60] Gorinevsky D. and Vukovich G. "Control of flexible spacecraft using nonlinear approximation of input shape dependence on reorientation maneuver parameters," *13th World Congress of IFAC*, San Francisco, CA, June 1996
- [61] Gorinevsky, D.M., Vyse, B., et al. "Performance analysis of cross-directional control using multivariable and spectral models," *Control Systems '96*, pp. 9–14, Halifax, N.S., Canada, April 1996.
- [62] Gorinevsky, D.M., Heaven, M., et al. "New algorithms for intelligent identification of paper alignment and nonlinear shrinkage," *Control Systems '96*, pp. 41–47, Halifax, N.S., Canada, April 1996.
- [63] Burma, G., Vyse, R., Gorinevsky, D., and Heaven, M., "CD caliper control requirements for soft nip calenders," *The World Pulp and Paper Week - 5th Conference on New Available Techniques*, Stockholm, Sweden, 1996
- [64] Heaven, M., Gorinevsky, D., et al. "Application of the model-based tuning and analysis tools to paper machine control," CPPA EXFOR'96
- [65] Popovic, M., Gorinevsky, D., and Goldenberg, A.A. "Novel controller using fuzzy logic interpolation for accurate positioning under conditions of nonlinear low-velocity friction," *IEEE Conf. on Decision and Control*, pp. 267–272, New Orleans, LA, December 1995.
- [66] Gorinevsky, D., Heaven, M., et al. "Automated identification of web shrinkage and alignment in paper and film machines," *IEEE Intern. Conf. on Systems, Man, and Cybernetics*, pp. 3358–3362, Vancouver, B.C., October 1995.
- [67] Popovic, M., Gorinevsky, D., and Goldenberg, A.A. "Accurate positioning of devices with nonlinear friction using fuzzy logic pulse controller," *Intern. Symp. on Exper. Robotics, ISER'95*, Stanford, CA, June 1995, pp. 206–211.
- [68] Popovic, M., Gorinevsky, D., and Goldenberg, A.A. "A study of response to short torque pulses and fuzzy control of positioning for devices with stick-slip friction," *IEEE Conf. on Control Applications*, Albany, N.Y., September 1995.
- [69] Gorinevsky, D. "An application of on-line parametric optimization to task-level learning control," *American Control Conf.*, pp. 862–866, Seattle, WA, June 1995.
- [70] Gorinevsky, D., Torfs, D., and Goldenberg, A.A. "Learning approximation of feedforward dependence on the task parameters: Experiments in direct-drive manipulator tracking," *American Control Conf.*, pp. 883–887, Seattle, WA, June 1995.
- [71] Popovic, M., Gorinevsky, D., and Goldenberg, A.A. "Fuzzy logic controller for accurate positioning of direct-drive mechanism using force pulses," *IEEE Intern. Conf. on Robotics and Automation*, Nagoya, Japan, May 1995
- [72] Gorinevsky, D.M. "An algorithm for on-line parametric nonlinear least square optimization," *IEEE Conf. on Decision and Control*, Lake Buena Vista, FL, December 1994

- [73] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "RBF network architecture for on-line motion planning and attitude stabilization of free-floating manipulator system," *2nd IARP (International Advanced Robotics Program) Workshop on Robotics in Space*, Canadian Space Agency, St.-Hubert, Quebec, July 1994
- [74] Gorinevsky, D.M. "On the persistency of excitation in Radial Basis Function network identification of nonlinear systems," *American Control Conf.*, Baltimore, MD, June 1994, pp. 1442–1443
- [75] Gorinevsky, D.M. "Periodic adaptive stabilization of the unstable nonminimum phase system," *American Control Conf.*, Baltimore, MD, June 1994, pp. 2995–2999
- [76] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "Network architecture and controller design for automated car parking," *American Control Conf.*, Baltimore, MD, June 1994, pp. 806–810.
- [77] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "On-line approximation of control programs for a class of nonlinear free-flying systems," *American Control Conf.*, Baltimore, MD, June 1994, pp. 152–156.
- [78] Torfs, D., Gorinevsky, D.M., and Goldenberg, A.A. "Experiments in feedforward shaping control of direct-drive robot using RBF network," *IEEE World Congress on Computat. Intelligence*, Orlando, FL, June 1994
- [79] Gorinevsky, D.M. "Learning task-dependent input shaping control using Radial Basis Function network," *IEEE World Congr. on Computational Intelligence*, Orlando, FL, June 1994
- [80] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "RBF network architecture for motion planning and attitude stabilization of nonholonomic spacecraft/manipulator systems," *IEEE Intern. Conf. on Robotics and Automation*, San-Diego, CA, May 1994
- [81] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "AUTOPASS: Automatic parking support system," *SAE International Congress*, Detroit, MI, March 1994. SAE Paper #741000
- [82] Gorinevsky, D.M. "Multirate indirect adaptive control of a bioreactor using a novel Radial Basis Function network architecture," *Intelligent Control Systems*. ed. C.W. de Silva and R. Shoureshi, DSC-Vol. 48, ASME, 1993, pp. 67–74,
- [83] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "An architecture for control of car motion and application to parking," *Advanced Automotive Technologies*, ed. M. Ahmadian, DSC-Vol. 52, ASME, 1993, pp. 305–310
- [84] Gorinevsky, D.M. (1993) "Adaptive learning of feedforward control using Radial Basis Function network approximation," *1993 IEEE Intern. Symp. on Intelligent Control*, pp. 762–767, Chicago, IL, August 1993.
- [85] Gorinevsky, D.M., Kapitanovsky, A., and Goldenberg, A.A. "Intelligent control of nonholonomic space systems using Radial Basis Function network," *Advances in Robust and Nonlinear Control*, ed. E.A.Misawa, DSC-Vol. 53, ASME, 1993, pp. 1–8
- [86] Gorinevsky, D.M., and Connolly, T.H. "Comparison of inverse manipulator kinematics approximations from scattered input-output data using ANN-like methods," *American Control Conf.*, San-Francisco, CA, June 1993, pp. 751–755.

- [87] Gorinevsky, D.M. “Direct learning of feedforward control for manipulator path tracking,” *IEEE Int. Symp. on Intelligent Control*, pp. 42–47, Glasgow, UK, August 1992.
- [88] Gorinevsky, D.M. “Learning open-loop terminal control,” *American Control Conf.*, Vol. 3, pp. 1900–1901, Chicago, IL, June 1992,
- [89] Gorinevsky, D.M. “Galerkin approximation in control of distributed parameter flexible systems,” *European Control Conf.*, Vol. 1, pp. 61–65, Grenoble, July 1991.
- [90] Gorinevsky, D.M. “Learning and approximation in database for feedforward control of flexible manipulator,” *Intern. Conf. on Advanced Robotics*, Vol.1, pp. 688–692, Pisa, June 1991.
- [91] Gorinevsky, D.M., and Shneider, A.Yu. (1991) “Force control in locomotion of legged vehicles over rigid and soft surfaces,” *Intern. Conf. on Advanced Robotics*, Vol.1, pp. 609–612, Pisa, June 1991.
- [92] Gorinevsky, D.M. “Problems of flexible manipulator link control,” *Intern. Symp. on Foundations of Robotics*, pp. 1–10, Holzgau, Germany, 1990.
- [93] Diesing, H., Gorinevsky, D., Schneider, A., and Schmucker, U. “Some problems of automated calibration of force/torque sensors,” *Intern. Symp. on Foundations of Robotics*, Holzgau, Germany, 1990
- [94] Gurfinkel V.S., Gorinevsky D.M., Gurfinkel E.V. et al. “Control of adaptive walking robot,” *10th IFAC World Congress*, Vol. 4, pp. 218–225, Munich, 1987.
- [95] Gurfinkel, V.S., Gorinevsky, D.M., Lizunov, A.V. et al. “Control of manipulator with force sensing capability,” *5th IFAC/IFIP/IFORCE/IMACS Symp. on Information-Control Problems in Manufacturing Technology*, Suzdal, 1986

Russian Journal Papers Peer Reviewed and Published in Full (Translated in English)

- [R1] Gorinevsky D.M. (1992) “On the approximate inversion of linear system and quadratic-optimal control,” *Journ. Comput. Syst. Sci. Int.*, Vol. 30, No. 6, pp. 6–23.
- [R2] Gorinevsky, D.M. (1990) “Stabilization of angular position of viscoelastic beam by means of finite-dimensional state-feedback controller,” *Automation and Remote Control*, No. 10, pp. 183–185.
- [R3] Gorinevsky, D.M. (1990) “Stabilization of infinite-dimensional linear systems using finite-dimensional state controllers,” *Automation and Remote Control*, Vol. 51, No. 9, Part 1, pp. 1176–1181.
- [R4] Gorinevsky, D.M. (1990) “Method of Bubnov-Galerkin in problems of distributed flexible system control,” *Soviet Physics Doklady*, Vol. 35, No. 5, pp. 439–441.
- [R5] Gorinevsky D.M. and Lizunov A.B. (1989) “Controlling manipulator with structural elasticity using a force-torque sensor,” *Automation and Remote Control*, Vol. 50, No. 3, Part 1, pp. 305–314.
- [R6] Gorinevsky D.M. and Zvjagina T.Yu. (1988) “Active damping of flexible link vibrations,” *Mech. Solids*, Vol. 23, No. 5, pp 27–33.
- [R7] Gorinevsky D.M. and Shneider A.Yu. (1987) “Dynamics of small motions of a walking robot when there is feedback to the support reactions,” *Mech. Solids*, Vol. 22, No. 6, pp. 37–46.
- [R8] Gorinevsky D.M., Lensky A.V., and Shneider A.Y. (1986) “Dependence of the natural frequencies of a force-moment manipulator sensor on the design parameters,” *Mosc. Univ. Mech. Bull.*, Vol. 41, No. 3, pp. 10–16.
- [R9] Gorinevsky D.M. and Formal’sky A.M. (1985) “Stability of an elastic manipulator with force feedback,” *Mech. Solids*, Vol. 20, No. 3, pp. 48–56.
- [R10] Gorinevsky D.M. (1985) “Deceleration of an oscillatory system,” *Mech. Solids*, Vol. 20, No. 4, pp. 52–56.
- [R11] Gorinevsky D.M. (1983) “Dynamics of a manipulator with allowance for compliance of the joints,” *Mech. Solids*, Vol. 18, No. 6, pp. 37–43.
- [R12] Gorinevsky D.M. and Kireeva T.Yu. (1983) “Measurement of human muscle stiffness depending on its length,” *Fiziologija Cheloveka (Human Physiology)*, 1983, Vol. 9, No. 2, pp. 330–336 (in Russian)