

VLADIMIR GAITSGORY

CURRICULUM VITAE

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Education: Central Institute for Mathematical Economics of the USSR Academy of Science (Moscow), 1975-1978 (areas of specialization: Applied Mathematics, Control and Optimization Theory, Mathematical Economics). Leningrad Polytechnic Institute, 1967-1973 (areas of Specialization: Applied Mathematics and Control Theory).

Degrees: Ph.D. in Applied Mathematics - 1978, Institute for System Studies of the USSR Academy of Science (Moscow). M.Sc. in Automatic Control - 1973, Leningrad Polytechnic Institute.

Area of expertise: Control, optimisation, dynamical systems and games theories, and their applications in electrical and mechanical engineering, environmental modelling and manufacturing systems.

Professional Experience:

January 2005-present: Professor of Mathematics, Director of the Centre for Industrial and Applied Mathematics (CIAM), School of Mathematics and Statistics, University of South Australia

1999-2004: Associate Professor, School of Mathematics and Statistics, University of South Australia

1997-1998: Senior Lecturer, School of Mathematics, University of South Australia.

1993-1996: Lecturer, School of Mathematics, University of South Australia.

1984-1989: Associate Professor (Docent), Department of Mathematics, Tajik State University, Dushanbe, USSR.

1982-1984: Senior Research Fellow, Assistant Professor, Department of Mathematics, Tajik State University, Dushanbe, USSR.

1979-1982: Research Fellow, Computer Center of Tajik Academy of Science, Dushanbe, USSR.

1973-1975: Junior Research Fellow, Central Institute for Mathematical Economics of the USSR Academy of Science, Moscow.

Visiting Positions:

08/06/2003 -- 30/06/2003: University of Paris I

18/05/2002 – 17/06/2002: University of Paris-Dauphine

15/11/1994 – 15/02/1995: Weizmann Institute of Science, Israel
1991--1993: Department of Economics, Bar-Ilan University, Israel
1990--1991: School of Mathematical Sciences, Tel-Aviv University, Israel

Teaching Activities:

Undergraduate and graduate courses in Mathematics and related areas including:
Control and Optimization Theory, Operations Research and Financial Mathematics.

Grants, Industrial Research and Consulting:

Duality, singular perturbations and numerical analysis in infinite dimensional linear programming problems related to problems of control of nonlinear dynamical systems (**ARC Discovery Grant 2009-2011**, Sole CI)

Occupational Measures Approach to Long Run Average and Singularly perturbed Optimal Control (**ARC Discovery Grant 2006-2008**, Sole CI)

Multiscale Singularly Perturbed Control Systems (**ARC Discovery Grant, 2003-2005**, Sole CI)

Asymptotic Analysis of Singularly Perturbed Mathematical Programs (**ARC Large Grant 2000 -2002**, CI, jointly with J.Filar and P.Howlett)

Controlled Markov Chains and Hybrid Systems II (**ARC Large Grant 1999-2001**, CI jointly with J.Filar)

Stochastic Differential Game Theory (**ARC Large Grant 1997-1999**, CI jointly with J.Filar)

Controlled Markov Chains and Hybrid Systems I (**ARC Large Grant 1995-1997**, CI jointly with J.Filar)

Linear Programming Approach to Nonlinear Deterministic and Stochastic Control Problems: Perturbations Methods and Numerical Analysis (**ARC Linkage International Grant, 2008-2010** (CI jointly with V. Ejov, J. Filar, P. Howlett, Ch. Pierce – Australia and with J.-P. Aubin – France, K. Avrachenkov - France, V. Borkar - India, F. Colonius - Germany, P. Dupuis - USA, H. Frankowska - France, H. Kushner - USA, M. Quincampoix - France)

Singular and Analytic Perturbations, Slow and Fast Time Scales in Control Theory and Viability Theory and their Applications (**ARC Linkage International Grant, 2005-2007** (CI jointly with V. Ejov, J. Filar, P. Howlett, Ch. Pierce – Australia and with J.-P. Aubin, K. Avrachenkov, Frankowska – France, A. Gnedin – Holland, J.- B. Lasserre - France)

Singular Perturbations in Markov Decision Processes and Mathematical Programming (**ARC International Researcher Exchange Scheme - IREX 2001-2003**, CI jointly with J.Filar, P. Howlett, C. Pearce - Australia and E. Altman, J. Lasserre - France)

Global Minima in Optimization Problems (**ARC International Researcher Exchange Scheme - IREX 2000-2001**, CI jointly with A. Rubinov - Australia and A. Ioffe - Israel)

Stochastic Optimal Control of Solar Energy Systems (**ARC Small Grant 1997**, CI jointly with P. Howlett)

Network on Control, Dynamics and Systems -NCDS (**ARC Network Seed Funding Grant 2003**, jointly D. Nesic et al)

Mathematics for Government, Industry and Community -- The *Magic* Network (**ARC Network Seed Funding Grant 2003**, jointly with P.Howlett et al)

Service:

Member of ARC College of Experts (Engineering, Mathematics and Informatics - EMI), 2010

Member of the Executive Board of the International Society of Dynamic Games (2000-2004, 2008-2012).

Chairman of the International Program Committee of the 12th International Symposium on Dynamic Games and Applications, Sophia Antipolis, France, 2006

Organizer (with J.Filar and P.Howlett) of the International Workshop on Singular Perturbations in Control Systems devoted to the memory of A.A. Pervozvansky, Adelaide, December, 2000.

Co-Chairman (with J.Filar) of the Local Organizing Committee of the 9th International Symposium on Dynamic Games and Applications, Adelaide, December, 2000.

Organizer and Co-Organizer (with J.Filar) of five Minisimposia on Singularly Perturbed Optimal Control Problems (two at SIAM Conference on Control in Jacksonville, 1998; one at 35th IEEE Conference on Decision and Control in Kobe, 1996; and two at SIAM Conference on Control in St. Louis, 1995).

Member of the Organizing Committee of the 7th International Symposium on Dynamic Games and Applications, Shonan, Japan, 1996.

Chairman of the Organizing Committee of International Workshop on "Modern Applications of Markov Chains", University of South Australia, June 1995.

LIST OF PUBLICATIONS

Research Monographs (RM)

RM-1. Decomposition, Aggregation and Suboptimization, Moscow: Nauka (1979) (in Russian). A. Pervozvanskii and V. Gaitsgory.

RM-2. Theory of Suboptimal Decisions, Dordrecht: Kluwer Academic Publishers, 1988 (Revised and extended translation from Russian of Decomposition, Aggregation and Suboptimization). A. Pervozvanskii and V. Gaitsgory.

RM-3. Control of Systems with Slow and Fast Motions: Averaging and Asymptotic Analysis, Moscow: Nauka (1991) (in Russian). V. Gaitsgory.

Edited Volumes (EV)

EV-1. Annals of Dynamic Games and Applications, Annals of the International Society of Dynamic Games, Vol. 5, Boston, Birkhauser (2000). J. Filar, V. Gaitsgory and K. Mizukami Editors.

EV-2 Advances in Dynamic Games and Their Applications, Annals of the International Society of Dynamic Games, Vol. 10, Boston, Birkhauser (2009). P. Bernhard, V. Gaitsgory and O. Pourtallier Editors.

Book Chapters (B)

B-1. E. Altman, E. Feinberg, J. Filar and V. Gaitsgory, "Zero-Sum Games with Applications to Stochastic and Repeated Games", Annals of International Society of Dynamic Games, 6 (2001):165-181

B-2. Boland, J., Gaitsgory, V., Howlett, P. and Pudney, P. "Stochastic Optimal Control of a Solar Car". In A. Rubinov and B. Glover (eds.) Optimization and Related Topics, (2001), pp 71-81, Kluwer, Dordrecht.

B-3 K.E. Avrachenkov, L.D. Finlay and V.G. Gaitsgory "TCP-AQM Interaction: Periodic Optimization via Linear Programming
Stochastic Processes, Optimization, and Control Theory: Applications in Financial Engineering, Queuing Networks, and Manufacturing Systems.
Springer's International Series – Advancing the State-of-the-Art. Chapter 1, Pages 1 - 17

Articles in refereed journals (RJ)

- RJ-1. "Aggregation of Markov Chains with Weak Interactions," *Kibernetika* 3(1975): 91-98 (Journal of the Ukrainian Academy of Science translated into English). V. Gaitsgory and A. Pervozvanskii.
- RJ-2. "Separation of Motions in Markov Systems," *Dinamika Sistem* 6(1975): 14-46 (Collection of Articles Published by the University of Gorkii, in Russian). V. Gaitsgory and A. Pervozvanskii.
- RJ-3. "Small Nonlinear Perturbations in Optimization Problems," *Ekonomika i Matematicheskie Metodi* 1(1977): 135-142 (Journal of the USSR Academy of Science, in Russian). V. Gaitsgory and A. Pervozvanskii.
- RJ-4. "On a Simplified Solution of Optimal Planning Problems," *Matematicheskie Metodi Reshenia Economicheskikh zadach* 7(1977): 3-11 (Collections of Articles Published by Central Institute for Mathematical Economics of the USSR Academy of Science, in Russian). V. Gaitsgory and A. Pervozvanskii.
- RJ-5. "On Approximate Optimization via Sliding Planning," *Automation and Remote Control* 10(1977): 93-99 (Journal of the USSR Academy of Science translated into English) V. Gaitsgory and A. Pervozvanskii.
- RJ-6. "Operative Control of Industrial Activity as a Problem of Stochastic Programming," *System Science* 1(1977): 91-95. A. Pervozvanskii and V. Gaitsgory.
- RJ-7. "Perturbation Method in Optimization Problems," *Dinamika Sistem* 14(1978) (Collection of Articles Published by the University of Gorkii, in Russian). V. Gaitsgory and A. Pervozvanskii.
- RJ-8. "Iterative Aggregation as a Tool for Solution of Incorrect Linear Programs," *Matematicheskie Metodi Reshenia Economicheskikh zadach* 8(1979): 3-12 (Collection of Articles Published by Central Institute for Mathematical Economics of the USSR Academy of Science, in Russian). V. Gaitsgory.
- RJ-9. "Small Parameter Method in a Singularly Perturbed LQ Problem: The Case of Imaginary Eigenvalues," *VINITI* 2488-79 (1979): 1-29 (Submitted by the Tajic Academy of Science, in Russian). V. Gaitsgory.
- RJ-10. "Perturbation Method in Optimal Control Problems," *System Science* 5:1(1979): 91-102. V. Gaitsgory and A. Pervozvanskii.
- RJ-11. "On Aggregation of Linear Control Systems," *Automation and Remote Control* 8(1980): 88-95 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory and A. Pervozvanskii.
- RJ-12. "Control of Linear Systems close to Conservative," *Automation and Remote Control* 10(1980):12-18 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory and A. Pervozvanskii.

- RJ-13. "On the Optimization of Weakly Controlled Stochastic Systems," Soviet Math. Dokl. 251:2(1980): 408-410 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory and A. Pervozvanskii.
- RJ-14. "Application of a Perturbation Method to Problems of Continuous Production," Automation and Remote Control 7(1982):81-90 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory and M. Chegirinsky.
- RJ-15. "Decomposition and Aggregation in Problems with a Small Parameter," Engineering Cybernetics 1(1983): 33-46 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory and A. Pervozvanskii.
- RJ-16. "Perturbation Method for Mathematical Programming Problems," *Economica i Matematicheskie Metodi* 4(1983) (Journal of the USSR Academy of Science), Translated into English in *Matecon* XX:3(1984). V. Gaitsgory and A. Pervozvanskii.
- RJ-17. "Asymptotic Properties of Controls which are Optimal in the Averaged Sense," *Matematicheskie Metodi Optimizacii, Upravlenia i Obrabotki Dannih* (1983):17-20 (Collection of Articles Published by the University of Riazan, in Russian). V. Gaitsgory and A. Pervozvanskii.
- RJ-18. "Asymptotic Behavior of Solutions of Optimal Control Problems with Averaged Indices of Performance," *Tajik. INTI* 20:226(1983): 1-42 (Submitted by Tajik State University, in Russian). V. Gaitsgory.
- RJ-19. "On the Averaging Principle with respect to the Fast Variables and Controls in Singularly Perturbed Optimal Control Problems," *Tajik. INTI* 51:257(1983): 1-35 (Submitted by Tajik State University, in Russian). V. Gaitsgory.
- RJ-20 "The Structure of the Limit of the Outputs Set of a Control System," *Dokladi Akademii Nauk Tajik. SSR* 27:2(1984):59-62 (in Russian). V. Gaitsgory.
- RJ-21. "Theorems of Existence and Structure of the Outputs Limit Set of a Control System and there Applications to Suboptimization of Singularly Perturbed Control Systems," *Metodi Optimizacii* 12(1984): 3-15 (Collection of Articles Published by Institute for System Studies of the USSR Academy of Science, in Russian). V. Gaitsgory.
- RJ-22. "The Averaging Principle in Control Problems," *Dokladi Akademii Nauk Tajik. SSR* 28:1(1985):3-6 (in Russian). V. Gaitsgory.
- RJ-23. "Asymptotic Properties of Control Problems Considered on Infinite Time Horizon," *Engineering Cybernetics* 3(1985): 161-169 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory.
- RJ-24. "Application of the Averaging Method for Construction of Suboptimal Solutions to Singularly Perturbed Optimal Control Problems," *Automation and Remote Control* 9(1985): 22-30 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory.

- RJ-25. "Interconnection between Problems of Production Operative Control and Local Optimization of the Aggregates," Automation and Remote Control 6(1986): 135-146 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory, E. Ickovich, A. Pervozvanskii and L. Sorokin.
- RJ-26. "Perturbation Theory for Mathematical Programming," Journal of Optimization Theory and Applications 49:3(1986): 389-410. V. Gaitsgory and A. Pervozvanskii.
- RJ-27. "Use of the Averaging Method in Control Problems," Differential Equations 11(1986): 1290-1298 (Journal of the USSR Academy of Science translated into English). V. Gaitsgory.
- RJ-28. "Averaging on Families of Controls with Bounded Variations," Dokladi Akademii Nauk Tajik. SSR 9(1987): 544-548 (in Russian). V. Gaitsgory.
- RJ-29. "Suboptimization of Singularly Perturbed Control Systems," SIAM J. on Control and Optimization 30:5(1992): 1228-1249. V. Gaitsgory.
- RJ-30. "Suboptimal Control of Singularly Perturbed Systems and Periodic Optimization,"
IEEE Trans. on AC, 38:6(1993): 888-903. V. Gaitsgory.
- RJ-31. "Control of a Hybrid Stochastic System," Systems and Control Letters, 20(1993): 307-314. E. Altman and V. Gaitsgory.
- RJ-32. "Stability and Singular Perturbations in Constrained Markov Decision Problems," IEEE Trans. on AC, 38:6(1993):971-975. E. Altman and V. Gaitsgory.
- RJ-33. "Folk Theorem in Dynamic Games", Journal of Mathematical Economics, 23(1994): 167-178. V. Gaitsgory and Sh. Nitzan.
- RJ-34. "A new reduction Technique for a Class of Singularly Perturbed Optimal Control Problems", IEEE Trans. on AC, 40:4 (1995): 721-724. V. Gaitsgory
- RJ-35. "Limit Hamilton-Jacobi-Isaaks Equations for Singularly Perturbed Zero-Sum Differential Games", Journal Mathematical Anal. and Applications, 202 (1996): 862-899. V. Gaitsgory
- RJ-36. "Linear-Quadratic Tracking of Coupled Slow and Fast Targets", Math. Control Signals Systems, 10 (1997): 1-30. Z. Artstein and V. Gaitsgory
- RJ-37. "On the Construction of Asymptotically Optimal Controls for Singularly Perturbed Systems", System and Control Letters, 30 (1997): 139-147. V. Gaitsgory and G. Grammel
- RJ-38. "Tracking Fast Trajectories Along a Slow Dynamics: A Singular Perturbations Approach", SIAM J. on Control and Optimization, 35:5 (1997): 1487-1507. Z. Artstein and V. Gaitsgory

- RJ-39. "Asymptotic Optimization of a Nonlinear Hybrid System Governed By a Markov Decision Process", *SIAM J. on Control and Optimization*, 35:5 (1997): 2070-2085. E. Altman and V. Gaitsgory
- RJ-40. "On Asymptotic Optimization of a Class of Nonlinear Hybrid Systems", *Mathematical Methods of Operations Research, ZOR*, 7:2 (1998): 289-315. P. Shi, E. Altman and V. Gaitsgory
- RJ-41. "Limit Occupational Measures Set for a Control System and Averaging of Singularly Perturbed Control Systems", *Journal of Mathematical Analysis and Applications*, 233 (1999): 461-475. V. Gaitsgory and A. Leizarowitz
- RJ-42. "Asymptotic Analysis of Manifold Ambiguity Resolution in DOA Estimation with Nonuniform Antenna Arrays", *International Journal of Electronics and Communications*, 53:6 (1999). 364-370. . Abramovich, Y.I., Gaitsgory, V. and Spencer, N.K.,
- RJ-43. "The Value Function of Singularly Perturbed Control System", *Applied Mathematics and Optimization*, 41 (2000): 425-445. Z. Artstein and V. Gaitsgory
- RJ-44. "On a Class of Nash Equilibria with Memory Strategies for Nonzero-Sum Differential Games", *International Game Theory Review* 2:3 (2000) : 173-192. J.M. Coulomb and V. Gaitsgory
- RJ-45. "Control of Singularly Perturbed Hybrid Stochastic Systems", *IEEE Trans. on Autom. Control*, 46:2(2001): 179-190. J.A. Filar, V. Gaitsgory and A. Haurie.
- RJ-46. "Averaging of Three Time Scale Singularly Perturbed Control Systems", *Systems and Control Letters*, 42(2001): 395-403. V. Gaitsgory and M.T. Nguyen
- RJ-47. "Multiscale Singularly Perturbed Control systems: Limit Occupational Measures Sets and Averaging", *SIAM J. on Control and Optimization* 41:3(2002): 954-974. V. Gaitsgory and M.T. Nguyen
- RJ-48. "Convergence to Convex Compact Sets in Infinite Dimensions", *J. Mathematical Analysis and Applications*, 284(2003): 471-480. Z. Artstein and V. Gaitsgory
- RJ-49. "A Theory of Multi-Period Contest Preparation", *Journal of Mathematical Sciences*, 116:4 (2003): 3468-3487. Gaitsgory, V. and Y. Zeif
- RJ-50. "On a Representation of the Limit Occupational Measures Set of a Control System with Applications to Singularly Perturbed Control Systems", *SIAM J. on Control and Optimization*, 43:1 (2004): 325-340. V. Gaitsgory
- RJ-51. "On Existence of Limit Occupational Measures Set of a Controlled Stochastic Differential Equation", *SIAM J. on Control and Optimization*, 44:4 (2005/2006): 1436-1473. V. Borkar and V. Gaitsgory

RJ-52. "Linear Programming Approach to deterministic Long Run Average Problems of Optimal Control", SIAM J. on Control and Optimization, 44:6 (2005/2006): 2006-2037. V. Gaitsgory and S. Rossomakhine

RJ-53. "Averaging and Near Viability of Singularly perturbed Control Systems", Journal of Convex Analysis, 13:2 (2006): 329-352. V. Gaitsgory

RJ-54. "Linear Programming Solutions of Periodic Optimization Problems: Approximation of the Optimal Control", Journal of Industrial and Management Optimization, 2:3 (2007), pp. 399- 413. L. Finlay, V. Gaitsgory and I. Lebedev.

RJ-55 "Singular Perturbations in Ergodic Control of Diffusions", SIAM J. on Control and Optimization, 46:5 (2007), pp. 1562-1577. V. Borkar and V. Gaitsgory.

RJ-56 "Averaging of Singularly Perturbed Controlled Stochastic Equations", Applied Mathematics and Optimization, 56 (2007), pp 169-209. V. Borkar and V. Gaitsgory.

RJ-57. "Duality In Linear Programming Problems Related to Long Run Average Problems of Optimal Control", SIAM J. on Control and Optimization, 47 (2008):4, pp. 1667-1700. L. Finlay, V. Gaitsgory and I. Lebedev

RJ-58 "Linear Programming Problems Related to Deterministic Infinite Horizon Optimal Control Problems with Discounting", SIAM J. on Control and Optimization, 48 (2009):4, pp.2480-2512. V. Gaitsgory and M. Quincampoix

Papers published in refereed and un-refereed proceedings (PR)

PR-1. "A Hierarchical Procedure for Optimal Control of Finite Markov Chains," Proceedings of the Seventh Workshop on Mathematical Programming: 185-187, Drogobich, 1974 (in Russian).
V. Gaitsgory and A. Pervozvanskii.

PR-2. "Sensitivity of Mathematical Programming Problems," Proceedings of the Ninth All Union Congress on Problems of Sensitivity", Kiev, 1975 (in Russian).
A. Pervozvanskii and V. Gaitsgory.

PR-3. "Approximate Optimization, Decomposition and Aggregation," Proceedings of the Seventh All Union Congress on Control Problems: 143-145, Minsk, 1977 (in Russian). A. Pervozvansky and V. Gaitsgory.

PR-4. "Suboptimization, Decomposition and Aggregation," Proceedings of the VIIth World Congress of the International Federation on Automatic Control (IFAC): 1057-1062, Helsinki, 1978. A. Pervozvansky and V. Gaitsgory.

PR-5. "Perturbation Method for LQ Problems: Duality in Degenerated Cases," Proceedings of the Second Warsaw Workshop on Multi-Level Control, 1978,
A. Pervozvansky and V. Gaitsgory.

- PR-6. "Degeneracy in LQ and LQG Problems of Optimal Control," Proceedings of the VIIIth World Congress of the International Federation on Automatic Control (IFAC): 155-160, Kyoto, 1981. A. Pervozvansky and V. Gaitsgory.
- PR-7. "Aggregation and Decomposition in Control of Large Systems (Asymptotic Approach)," Proceedings of the IXth World Congress of the International Federation on Automatic Control (IFAC), Budapest, 1984. A. Pervozvanskii and V. Gaitsgory.
- PR-8. "Asymptotic Aggregation with respect to Time in Control Problems," Proceedings of the All Union Conference on Aggregations Methods in Control and Planning: 111-120, Kiev, 1984 (in Russian). V. Gaitsgory.
- PR-9. "An Averaging Principle for Optimal Control Problems with Singular Perturbations," Proceeding of the International Conference on Stochastic Optimization: 641-648, Kiev, 1984. (Lecture Notes in Control and Information Sciences Edited By V. Arkin, A. Shirayev, R. Wets, Springer-Verlag, 1986). V. Gaitsgory.
- PR-10. "Asymptotic Convexity Properties in Control Problems with Decomposable Motions," Proceedings of the Tenth All Union Congress on Control Problems: 35-36, Alma-Ata, 1986 (in Russian). V. Gaitsgory.
- PR-11. "Some Asymptotic Properties of Stochastic Control Problems with Performance Indices Averaged on Infinite Time Interval," Proceeding of the Second IFAC Symposium on Stochastic Control: Part 1: 312-315, Vilnius, 1986. V. Gaitsgory.
- PR-12. "Asymptotic Analysis and Averaging in Control Problems," Proceedings of the Xth World Congress of the International Federation on Automatic Control (IFAC): 141-145, Munich, 1987. V. Gaitsgory.
- PR-13. "A General Approach to Nonlinear Singularly Perturbed Optimal Control Problems," Proceedings of the Thirteenth IMACS World Congress on Computation and Applied Math., 1991. V. Gaitsgory.
- PR-14. "Some Asymptotic Properties of Optimal Control Problems with Averaged Performance Indices Considered on Unbounded Time Intervals," Proceedings of US-Israel Binational Workshop on Optimization and Nonlinear Analysis: 130-141, Haifa, 1990 (Pitman Research Notes in Mathematics Series, A. Ioffe, M. Marcus and S. Reich Editors, Longman Scientific Technical, 1992). V. Gaitsgory
- PR-15. "Asymptotic Optimization of a Linear Differential System Controlled By Markov Decision Process," Proceedings of 31st IEEE Conference on Decision and Control, Tuscon (Arizona), 1992. E. Altman and V. Gaitsgory.
- PR-16. "Singular Perturbed Optimal Control Problems and Periodic Optimization," Proceedings of 31st IEEE Conference on Decision and Control, Tuscon (Arizona), 1992. V. Gaitsgory.
- PR-17. "Suboptimal Control of a Class of Hybrid Systems," Proceedings of 31st IEEE Conference on Decision and Control, Tuscon (Arizona), 1992. V. Gaitsgory.

- PR-18. "A Hybrid (Differential-Stochastic) Zero-Sum Game with Fast Stochastic Part", Proceedings of Sixth International Symposium on Dynamic Games and Applications, St-Jovite, Canada, 1994. E. Altman and V. Gaitsgory
- PR-19. "Folk Type Theorems in Dynamic Games with Time-Average Criteria", Proceedings of Sixth International Symposium on Dynamic Games and Applications, St-Jovite, Canada, 1994. V. Gaitsgory and Sh.Nitzan
- PR-20. "Control of Singularly Perturbed Hybrid Stochastic Systems", Proceedings of the 35th IEEE Conference on Decision and Control, Kobe, Japan, 1996. J.A. Filar, V. Gaitsgory and A. Haurie
- PR-21. "Asymptotic Analysis of Stochastic Manufacturing System with Slow and Fast Machines", Proceedings of the 35th IEEE Conference on Decision and Control, Kobe, Japan, 1996. T.R. Bielecki, J.A. Filar and V. Gaitsgory
- PR-22. "On Optimization of a Class of Hybrid Systems with Fast Stochastic Dynamics", Proceedings of the 35th IEEE Conference on Decision and Control, Kobe, Japan, 1996. E.Altman, V. Gaitsgory and P. Shi.
- PR-23. "Asymptotic Optimization for a Class of Nonlinear Stochastic Hybrid Systems on Infinite time Horizon", Proceedings of the 1997 American Control Conference, Albuquerque, New Mexico, 1997. M.T. Nguyen and V. Gaitsgory.
- PR-24. "Perturbed Zero-Sum Games with Applications to Dynamic Games", Proc. 8th International Symposium on Dynamic Games and Applications, Maastricht, The Netherlands, 1998. E.Altman, E.Feinberg, J.A. Filar and V. Gaitsgory.
- PR-25. "The Averaging Principle for Perturbations of Continuous time Control Problems with Fast Controlled Jumps", Proceedings of the 39th IEEE Conference on Decision and Control, Sydney, 2000. R. El Azouzi, E. Altman and V. Gaitsgory
- PR-26. "Multiscale Singularly Perturbed Control systems: Limit Occupational Measures Sets and Averaging", Proceedings of the 42nd IEEE Conference on Decision and Control, Hawaii, 2003. V. Gaitsgory and M.T.Nguyen (a modified version of [RJ-47] submitted by SIAM and accepted after an independent review process).
- PR-27 "Occupational Measures Formulation and Linear Programming Solution of Deterministic Long Run Average Problems of Optimal Control", Conf Proceedings: Proceedings of 45th IEEE Conference on Decision and Control. Pages 5012 – 5017. Location: San Diego, CA, USA, Dec 13-15, 2006. V.G. Gaitsgory and S. Rossomakhine
- PR-28 "On existence of limit occupational measures set and averaging of singularly perturbed controlled stochastic differential equations", Conf Proceedings: Proceedings of 45th IEEE Conference on Decision and Control. Pages 326 – 331. Location: San Diego, CA, USA, Dec 13-15, 2006. V. Borkar and V.G. Gaitsgory

PR-29 "Analysis of TCP-AQM Interaction Via Periodic Optimization and Linear Programming: The Case of Sigmoidal Utility Function",
Conf Proceedings: 6th International Conference, NEW2AN 2006, Also *Lecture Notes in Computer Science v.4003*. Pages 517-529. Location: St Petersburg, Russia May/June 2006.
K. Avrachenkov, L.D. Finlay and V.G. Gaitsgory

PR-30 "Duality in Linear Programming Problems Related to deterministic Long Run Average Problems of Optimal Control with Applications to Periodic Optimization",
Conf Proceedings: Proceedings of 48th IEEE Conference on Decision and Control.
Pages 1207-1211. Location: Shanghai, China, Dec 16-18, 2009. L. Finlay, V. Gaitsgory and I. Lebedev