

BORIS S. MORDUKHOVICH–CURRICULUM VITAE

October 2012

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Current Positions

Distinguished University Professor at Wayne State University

Personal

Born in Moscow, Russia (former Soviet Union); Married, two children;

Citizen of the United States

Education

- **Ph.D.** in Applied Mathematics, Belarus State University (Minsk, Belarus, former Soviet Union)
- **M.S.** (*summa cum laude*) in Pure and Applied Mathematics, Belarus State University

Advanced Scientific Degree

Doctor of Sciences in Applied Mathematics and Cybernetics, Institute of Cybernetics, Ukrainian Academy of Sciences (Kiev, Ukraine, former Soviet Union)

Honorary Degrees

Doctor Honoris Causa, National Sun Yat-sen University, Taiwan

Doctor Honoris Causa, Alicante University, Spain

Doctor Honoris Causa, University of Messina, Italy

Society Fellowships and Academy Memberships:

Fellow, Society for Industrial and Applied Mathematics (SIAM)

Fellow, American Mathematical Society (AMS)

Lifetime Scholar, Academy of Scholars, Wayne State University

Corresponding Member, Accademia Peloritana dei Pericolanti (Italy)

Areas of Research

- *Optimization and Control Theory, Operations Research*
- *Nonlinear and Variational Analysis, Dynamical Systems (ODEs and PDEs)*
- *Applications to Engineering, Economics, Mechanics, and Ecology*

Professional Career

- *Wayne State University*, Detroit, Michigan: Professor of Mathematics, since 1989

Named Distinguished University Fellow, Distinguished Professor of the Graduate School, and Distinguished University Professor

- *University of Messina*, Messina, Italy: Distinguished Associate Member of the Faculty of Mathematical, Physical and Natural Sciences, since 2011

- *Research Center in Mathematics and Applications, University of Evora, Evora, Portugal*: Member of Advisory Panel, since 2011
- *Beijing Jiaotong University, Beijing, China*: Advisory Professor of the School of Science, since 2010
- *Harbin Normal University, Harbin, China*: Honorary Professor of the School of Mathematics, since 2009
- *University of Alicante, Alicante, Spain*: Distinguished Associate Member of the Department of Operations Research and Statistics, since 2009
- *King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*: Joint Professor of the Department of Mathematics and Statistics, since 2008
- *National Sun Yat-sen University, Kaohsiung, Taiwan*: Distinguished Associate Member of the Department of Applied Mathematics, since 2007
- *International University–Vietnam National University, HoChiMinh City, Vietnam*: Associate Member of the Department of Mathematics, since 2007
- *International Institute of Applied Systems Analysis, Laxenburg, Austria*: Associate Member of Scientific Staff (Dynamic Systems Programs), since 1994
- *Research and Development Institute of Water Resources and Management, Minsk, Belarus*: Scientist and Sr. Staff Scientist, 1973–1988
- *Belarus State University, Minsk, Belarus*: Adjunct Professor of Mathematics and Applied Mathematics, 1973–1988
- *Research and Development Institute of Automatic Technology and Control, Minsk, Belarus*: Research Engineer, 1971–1973

Selected Visiting Positions

- *Weierstrass Institute for Applied Mathematics and Stochastics, Berlin, Germany*: Visiting Professor, August 2012
- *Vietnam Institute for Advanced Study in Mathematics, Hanoi, Vietnam*: Visiting Professor, June 2012
- *Technical University of Vienna, Vienna, Austria*: Visiting Professor, May 2012
- *University of Linz, Linz, Austria*: Visiting Professor, May 2012
- *University of Chile, Santiago, Chile*: Visiting Professor, January 2012
- *The Fields Institute of Mathematical Sciences, Toronto, Canada*: Visiting Researcher, October 2011.
- *King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia*: Joint Professorship, December 2011
- *University of New South Wales, Sydney, Australia*: Visiting Professor, July 2011
- *University of Messina, Messina, Italy*: Distinguished Visiting Professor, June 2011
- *University of Bari, Bari, Italy*: Visiting Professor, May–June 2011
- *Institute for Research in Fundamental Sciences, Tehran, Iran*: Visiting Researcher, January–February 2011

- *National Technical University*, Quito, Ecuador: Distinguished Visiting Professor, July–August 2010
- *National University of Rosario*, Rosario, Argentina: Distinguished Visiting Professor, July 2010
- *Hanoi Institute of Mathematics*, Hanoi, Vietnam: Visiting Scholar, May 2010
- *King Fahd University of Petroleum and Minerals*, Dhahran, Saudi Arabia: Joint Professorship, March 2010
- *University of Paul Sabatier*, Toulouse, France: Visiting Professor of Exceptional Rank, July 2009
- *German International Graduate School*, Bayreuth–Erlangen–Wuerzburg, Germany: Distinguished Guest Professor, June 2009
- *German Federal Research Center in Mathematics MATHEON*, Berlin, Germany: Distinguished Guest Professor, May–June 2009
- *Intituto Nazionale di Alta Matematica and Scuola Normale Superiore*, Rome–Milan–Pisa–Pavia–Varese, Italy: National Visiting Professor, April–May 2009
- *University of Padova*, Padua, Italy: Fondazione Cariparo Distinguished Visiting Professor, January–April 2009
- *University of Kyoto*, Kyoto, Japan: Guest Professor, December 2008
- *National Sun Yat-sen University*, Kaohsiung, Taiwan: Distinguished Visiting Professor, November–December 2008
- *University of Chile*, Santiago, Chile: Guest Professor, November 2008
- *University of Alicante*, Alicante, Spain: Senior Visiting Professor, October–November 2008
- *Miguel Hernandez University*, Elche, Spain: Senior Visiting Professor, September–October 2008
- *University of Porto*, Porto, Portugal: Visiting Scholar at the Center of Applied Mathematics, July–August 2008
- *King Fahd University of Petroleum and Minerals*, Dhahran, Saudi Arabia: Visiting Professor, March 2008
- *Curtin University of Technology*, Perth, Australia: Visiting Professor, July 2007
- *University of Adelaide*, Australia: Visiting Professor, July 2007
- *Pukuong National University*, South Korea: Visiting Professor, June 2007
- *National Sun Yat-sen University*, Kaohsiung, Taiwan: Visiting Professor, May–June 2007
- *International University–Vietnam National University*, HoChiMinh City, Vietnam: Visiting Professor, March 2007
- *University of Perpignan*, France: Visiting Professor, June–July 2006
- *Harbin Normal University*, China: Visiting Professor, June 2006
- *Hong Kong Polytechnic University*, China: Visiting Professor, May 2006
- *Royal Melbourne Institute of Technology*, Australia: Visiting Professor, September–October 2004 and March 2005
- *Indian Institute of Technology*, Delhi and Kanpur, India: Visiting Professor, December 2003
- *Institute of Mathematics and Institute of Automatization, National Academy of Sciences*: Prague, Czech Republic: Visiting Scholar, April–May 2003

- *Institute of Mathematics, National Academy of Sciences*, Hanoi, Vietnam: Visiting Scholar, August–September 2002
- *Institute of Cybernetics, National Academy of Sciences*, Kiev, Ukraine: Visiting Scholar, May–June 2002
- *University of Paul Sabatier*, Toulouse, France: Visiting Professor, May–June 2000
- *University of Chile*, Santiago, Chile: Visiting Researcher, March 2000
- *University of Bourgogne*, Dijon, France: Visiting Professor, May–June 1999
- *Peking University*, Beijing, China: Visiting Professor, June 1998
- *Humboldt University*, Berlin, Germany: Visiting Professor, September–October 1997
- *The Technion*, Haifa, Israel: Visiting Researcher, March 1997 and March 1998
- *University of Limoges*, France: Visiting Professor, June 1996
- *Simon Fraser University*, Burnaby, Canada: Visiting Researcher, May 1996 and August 1997
- *University of Uppsala*, Sweden: Visiting Professor, June 1995 and May 1997
- *University of Porto*, Portugal: Visiting Professor, May 1995
- *International Institute for Applied Systems Analysis*, Laxenburg, Austria: Visiting Scientist, June 1994, July–August 1995, July–August 1996, June–July 1997, December 2005, and December 2006
- *University of New South Wales*, Sydney, Australia: Visiting Professor, March 1993
- *l'Institut National de Recherche en Informatique et en Automatique (INRIA)*, Rocquencourt, France: Visiting Scientist, July 1990 and July 1996
- *University of Pau*, France: Visiting Professor, May–June 1990
- *University of Montreal, Center for Mathematical Research*, Canada: Visiting Researcher, May–August 1989

Selected Honors

- *Fellow of the Inaugurating Class*, American Mathematical Society, named in 2012
 - *Corresponding Member*, Accademia Peloritana dei Pericolanti, Italy, elected in 2012
 - *Principal Lecturer*, International School on Variational Analysis and Applications, Hanoi, Vietnam, 2012
 - *Principal Lecturer*, International Spring School on Analysis, Paseky, Czech Republic, 2012
 - *SIAM Fellow*, named in 2011
 - *Doctor Honoris Causa*, University of Messina, Messina, Italy, 2011
 - *Dedication of the International Workshop on Variational Analysis in Optimization and Equilibria*, Messina, Italy, June 2011
 - *Dedication of the book “Variational Analysis and Generalized Differentiation in Optimization and Control”*
 - *2 among 10 most cited papers* in Mathematical Programming for 2009–2010
- Springer Series on Optimization and Its Applications, Vol. 47, Springer, New York, 2010
- *Principal Lecturer*, International School on Control, Informatics and Optimization, Suzdal, Rus-

sia, June 2010

- *Principal Lecturer*, CIMPA-UNESCO School on Variational Inequalities and Related Topics, Hanoi, Vietnam, May 2010
- *Advisory Professor*, Beijing Jiaotong University, Beijing, China, 2010
- *Honorary Professor*, Harbin Normal University, Harbin, China, 2009
- *Distinguished Lecture Award*, Pacific Institute of Mathematical Sciences and University of Victoria, Canada, 2009
- *Doctor Honoris Causa*, Alicante University, Alicante, Spain, 2009
- *Dedication of the Special Issue on Variational Analysis and Optimization of the Taiwanese Journal of Mathematics* **13** (2009), No. 6A
- *Dedication of the Special Issue on Generalized Differentiation, Variational Analysis and Mathematical Control of the International Journal of Mathematics and Statistics* **5** (2009), No. A09
- *Dedication of the International Symposium on Variational Analysis and Optimization*, Kaohsiung, Taiwan, November 2008
- *Dedication of the Special Cluster on Variational Analysis and Optimization at the Central Fall Meeting of the American Mathematical Society*, Kalamazoo, Michigan, October 2008
- *Dedication of the 10th Midwest Optimization Meeting*, Kalamazoo, Michigan, October 2008
- *Dedication (among others) of the International Conference “50 Years of Optimal Control”*, Bedlewo, Poland, September 2008
- *Dedication of the Special Clusters on Variational Analysis and Generalized Differentiation and on Mathematical Control Theory at the International Conference Control2008*, Vila Real, Portugal, July 2008
- *Dedication of the Special Issue on Variational Analysis and Generalized Differentiation of the International Journal “Set-Valued Analysis”* **16** (2008), Nos. 2–3
- *Honorary Medal of the Union of Czech Mathematicians and Physicists*, Czech Republic, 2008
- *Principal Lecturer*, International Workshop on Variational Analysis, Santiago, Chile, 2008
- *Distinguished Lecture Award*, The University of Texas–Pan American, 2008
- *Named Distinguished University Professor*: Wayne State University, 2008
- *Distinguished Award in Operational Research*, Indian National Science Academy, 2007
- *Principal Lecturer*, International Workshop on Variational Analysis and Optimization, Delhi, India, 2007
- *Doctor Honoris Causa*, National Sun Yat-sen University, Kaohsiung, Taiwan, 2007
- *Certificate of Appreciation*, Georgian Science Foundation, Tbilisi, Republic of Georgia, 2007
- *Principal Lecturer*, International Spring School on Optimization and Applied Mathematics, HoChiMinh City, Vietnam, 2007
- *Best Paper Award*, Academy of Sciences of Czech Republic, 2007
- *Board of Governors Faculty Recognition Award*, Wayne State University, 2007
- *Dedication of the International Workshop on Optimization and Optimal Control*, Harbin, China, 2006

- *Principal Lecturer*, International Spring School on Analysis, Paseky, Czech Republic, 2006
- *Certificate of Highest Merit*, International University–Vietnam National University, HoChiMinh City, Vietnam, 2006
- *Outstanding Graduate Mentor Award*, Wayne State University, 2006
- *Lifetime Scholar of the Academy of Scholars*, elected in 2004
- *Distinguished Graduate Faculty Award*, Wayne State University, 2004
- *Principal Lecturer*, Summer School of the First International Conference on Continuous Optimization, Troy, NY, 2004
- *Excellence in Teaching Award*: Wayne State University, 2004
- *Principal Lecturer*, International Spring School on Analysis, Paseky, Czech Republic, 2003
- *Best Paper Award*, Academy of Sciences of Czech Republic, 2002
- *Distinguished Faculty Fellowship*, Wayne State University, 1999
- *Board of Governors Faculty Recognition Award*, Wayne State University, 1998
- *Career Development Chair*, Wayne State University, 1992

Research Grants (Principal Investigator)

Continuous NSF support since 1990 including:

- *Research on Variational Analysis and Its Applications*, August 1, 2010–July 31, 2015, \$500,000, DMS-1007132
- *Methods of Variational Analysis in Optimization, Equilibria, and Control*, August 1, 2006–July 31, 2010, \$300,000, DMS-6524882
- *Asymptotic Analysis in Stochastic Processes, Nonparametric Estimation, and Related Problems* (with P.-L. Chow and G. Yin), June 1, 2006–May 31, 2008, \$30,408, DMS-6497883
- *Variational Analysis and Applications*, August 15, 2003–August 31, 2008, \$277,000, DMS-0304989
- *Variational Analysis and Geometric Methods in Optimal Control* (with H. J. Sussmann and Q. J. Zhu), February 15, 2003–March 31, 2004, \$8,000, DMS-0245279
- *Variational Analysis: Theory and Applications*, July 15, 2000–December 31, 2003, \$155,000, DMS-0072179
- *Research on Variational Analysis and Applications*, July 1, 1997–June 30, 2000, \$102,000, DMS-9704751
- *Applications of Infinite-Dimensional Nonsmooth Analysis to Optimization and Control* (with A. D. Ioffe), June 1, 1994–May 31, 1998, \$118,919, DMS-9404128
- *Nonsmooth Analysis and Approximation Methods in Optimization and Control*, June 1, 1992–December 31, 1995, \$84,000, DMS-9206989
- *Studies in Optimization, Nonsmooth Analysis, and Optimal Control*, July 1, 1990–December 31, 1992, \$59,882, DMS-9006224

Other Grants and Contracts

- *Research on Variational Analysis and Optimization*, Collaborative Project with Hanoi Institute

of Mathematics, USA-Vietnam, January 1, 2011–December 31, 2013, \$350,000

- *Variational Analysis: Theory and Applications* (with G. Smirnov et al.), May 1, 2011–April 30, 2014, \$180,000, Grant MAT/111809 from the Portuguese Foundation of Science and Technology and European Regional Development Fund
- *Endogenous Heterogeneity and Periodicity in Problems of Dynamic Optimization* (with V. Veliov et al.; consultant), June 1, 2010–May 31, 2013, \$200,000, Grant # ARF 1818-2010 from the Austrian Research Fund
- *A New Improved Solution to Global Optimization over Multivariate Polynomials: Mathematical Principles, Numerical Methods and Selected Applications* (with V. Jeyakumar et al.), January 1, 2010–December 31, 2013, \$400,956, Australian Research Council, Discovery Project DP12092508
- *A Comparative Study of Generalized Solution Concepts for Elliptic Partial Differential Equations Using Nonsmooth Analysis Techniques* (with A. Eberhard and C. Pearce), October 1, 2004–December 30, 2007, \$150,000, Australian Research Council, Grant No. DP-0451168
- *A Study of Approximate Solutions to Mathematical Programs and Equilibrium Problems with Equilibrium Constraints via Fuzzy Set Theory Concepts* (with P. J. Gupta), March 1, 2005–September 30, 2005, \$10,000, Ministry of Science and Technology of India
- *Nonsmooth Analysis in Calculus of Variations and Optimal Control* (with A. D. Ioffe and R. T. Rockafellar), March 1, 1996–February 28, 1999, \$50,000, The United States–Israel Binational Science Foundation, Grant No. 94-00237
- *Infinite-Dimensional Nonsmooth Analysis and Applications* (with J. M. Borwein), 1996–1998, \$10,000, National Sciences and Engineering Research Council of Canada
- *Variational Analysis Applied to Nonsmooth Analysis and Generalized Equations* (with M. Théra et al.), January 1, 1995–March 31, 1997, \$8,000, NATO Contract No. CRG-950360

Doctoral Students and Postdoctoral Associates Directed

Total Number: 35

Recent Doctoral Students at Wayne State University

- *Hung Minh Phan* (2011), Postdoctoral Fellow, Pacific Institute of Mathematical Science, British Columbia, Canada
- *Hoang Dinh Nguyen* (2011), Assistant Professor of Mathematics, International Tan Tao University, Vietnam
- *Mohammed Al-Shahrani* (2011), Assistant Professor at King Fahd University of Petroleum and Minerals, Saudi Arabia
- *Samarathunga Dassanayaka* (2010), Associate Professor of Mathematics, University of Peradeniya, Sri Lanka
- *Mehari Gebregziabher* (2010), Research Associate, Wayne State University
- *Yen-Nhi Nguyen-Thi* (2010), Lecturer, University of Puerto Rico
- *Bao Truong* (2008), Assistant Professor of Mathematics at Northern Michigan University
- *Nguyen Mau Nam* (2007), Associate Professor of Mathematics at Portland State University, Oregon

- *Wondi Geremew* (2005), Associate Professor of Mathematics at the Richard Stockton College of New Jersey
- *Aychi Habte* (2005), Associate Professor of Mathematics at Benedict College, South Carolina
- *Dong Wang* (2005), Associate Professor of Mathematics at Fayetteville State University, North Carolina
- *Ilya Shvartsman* (2003), Associate Professor of Mathematics at Pennsylvania State University
- *Lianwen Wang* (2003), Associate Professor of Mathematics at Central Missouri State University
- *Bingwu Wang* (2002), Professor of Mathematics at Eastern Michigan University
- *Glenn Malcolm* (1998), Research Associate, Economic Department, Wayne State University
- *Kaixia Zhang* (1997), Manager in Applied Math. and Statistics, Alliance Data Systems, Ohio
- *Yongheng Shao* (1997), Senior Staff Scientist at Altair Engineering, Michigan
- *Feng Chen* (1995), Applied Mathematician at Ford Motor Company, Michigan
- *Imad Dakka* (1994), Professor of Mathematics, Oakland College, Michigan

Current Doctoral Students at Wayne State University

- *Tan Cao Hoang*
- *Ebrahim Sarabi*
- *Thao Vu*
- *Tran Nghia*
- *Elisa Calzolari*
- *Wei Ouyang*
- *Tian Yuan*

Recent Postdoctoral Fellows and Research Visitors at Wayne State University

- *Bui Trong Kien* (Vietnam), 2012
- *Nguyen Quang Huy* (Vietnam), 2012
- *Nguyen Thi Toan* (Vietnam), 2012
- *Thi Thu Huong* (Vietnam), 2012
- *Ngoc Tuan* (Vietnam), 2012
- *Ta Duy Phuong* (Vietnam), 2011
- *Nguyen Nang Tam* (Vietnam), 2011
- *Nguyen Huy Chieu* (Vietnam), 2011
- *Thai Doan Chuong* (Vietnam), 2011
- *Nguyen Thanh Qui* (Vietnam), 2011
- *Pham Duy Khanh* (Vietnam), 2011
- *Nguyen Dong Yen* (Vietnam), 2011

- *Alain Zemkoho* (Germany), 2011
- *Tamaz Tadumadze* (Republic of Georgia), 2010
- *Shawn Wang* (Canada), 2009
- *Wen Song* (China), 2009
- *Yajun Li* (China), 2007–2008
- *Nguyen Dong Yen* (Vietnam), 2007
- *Geraldo Sanchez Licea* (Mexico), 2006–2007
- *Pankaj Gupta* (India), 2005
- *Teodora Gulea* (Romania), 2003

Selected Editorial Positions

- EDITOR-IN-CHIEF, *Set-Valued and Variational Analysis: Theory and Applications*, since 2009
- GUEST EDITOR, special issue of *Optimization on Recent Advances in Continuous Optimization*, 2012–2014
- ASSOCIATE EDITOR, *Journal of Inequalities and Applications*, since 2012
- GUEST EDITOR, special issue of *Numerical Funct. Anal. Optim. on Variational Analysis and Applications*, 2012–2014
- ADVISORY EDITOR, *Iranian Journal of Operations Research*, since 2012
- GUEST EDITOR, special issue of *Vietnam J. Math. on Optimization and Variational Analysis*, 2011–2013
- GUEST EDITOR, special issue of *Journal of Optimization Theory and Applications on Optimization, Variational Analysis and Applications*, 2011–2013
- GUEST EDITOR, special issue of *Journal of Global Optimization on Generalized Convexity and Generalized Monotonicity*, 2011–2013
- GUEST EDITOR, special issue of *Positivity on Positivity in Variational Analysis and Optimization*, 2011–2013
- GUEST EDITOR, *Optimization* (2 special issues), 2011–2013
- ASSOCIATE EDITOR, *Acta Mathematica Vietnamica*, since 2011
- ASSOCIATE EDITOR, *Vietnam Journal of Mathematics*, since 2011
- GUEST EDITOR, *Nonlinear Analysis: Theory, Methods, Applications*, 2010–2012
- GUEST EDITOR, *Dynamics of Continuous, Discrete & Impulsive Systems, Series B*, 2010–2012
- GUEST EDITOR, *International Journal of Information Technology and Decision Making*, 2010–2012
- ASSOCIATE EDITOR, *SIAM Journal on Optimization*, since 2010
- ASSOCIATE EDITOR, *Journal of Optimization Theory and Applications*, since 2010
- ASSOCIATE EDITOR, *Applicable Analysis*, since 2010
- ASSOCIATE EDITOR, *Modern Economy*, since 2010

- ASSOCIATE EDITOR, *Mathematics in Engineering, Science and Aerospace*, since 2009
- GUEST EDITOR, special issue of *Applicable Analysis on Variational Analysis and Related Topics*, 2009–2011
- ASSOCIATE EDITOR, *Studia Universitatis Babes-Bolyai, Series Mathematics*, since 2008
- ASSOCIATE EDITOR, *International Journal on Optimization: Theory, Methods, Applications*, since 2008
- GUEST EDITOR, special issue of *Taiwanese Journal of Mathematics on Generalized Convexity and Monotonicity*, 2008–2009
- ASSOCIATE EDITOR, *Applicable Analysis*, since 2009
- ASSOCIATE EDITOR, *Dynamics of Continuous, Discrete & Impulsive Systems, Series B*, since 2007
- ASSOCIATE EDITOR, *Taiwanese Journal of Mathematics*, since 2007
- GUEST EDITOR, special issue of *Taiwanese Journal of Mathematics on Nonlinear and Convex Analysis*, 2007–2008
- ASSOCIATE EDITOR, *Nonlinear Analysis: Theory, Methods, Applications*, since 2006
- ASSOCIATE EDITOR, *Journal of Convex Analysis*, since 2006
- GUEST EDITOR, special issue of *Optimization Methods and Software on Nonsmooth Optimization and Related Topics* dedicated to memory of Naum Shor, 2006–2007
- ASSOCIATE EDITOR, *Mathematical Programming, Series B*, 2005–2008
- ASSOCIATE EDITOR, *Optimization Letters*, since 2005
- GUEST EDITOR, special issue of *Mathematical Programming, Series B on Nonsmooth Optimization and Its Applications* dedicated to Boris Polyak, 2005–2006
- GUEST EDITOR, special two-volume issue of *Mathematical Programming, Series B on Variational Analysis, Optimization and Their Applications* dedicated to Terry Rockafellar, 2003–2005
- ASSOCIATE EDITOR, *Mathematics of Operations Research*, since 2003
- GUEST EDITOR, special issue of *Set-Valued Analysis on Variational Analysis and Its Applications*, 2002–2004
- ASSOCIATE EDITOR, *Optimization*, since 2000
- ASSOCIATE EDITOR, *Journal of Mathematical Analysis and Applications*, 1999–2008
- ASSOCIATE EDITOR, *Set-Valued Analysis*, 1999–2008
- ASSOCIATE EDITOR, *Positivity*, since 1996
- ASSOCIATE EDITOR, *Journal of Dynamical and Control Systems*, since 1994
- ASSOCIATE EDITOR, *SIAM Journal on Control and Optimization*, 1993–2000

Other Professional Service (Selected Items)

- *Chair of the Scientific Committee*, International Working Group on Generalized Convexity, elected in 2011
- *President*, Academy of Scholars, Wayne State University, 2010–2011

- *Vice President*, Academy of Scholars, Wayne State University, 2009–2010
- *Member of the Scientific Committee*, International Working Group on Generalized Convexity, 2009–2011
- *Co-Organizer* Special Session on Nonlinear Analysis and Optimization at the Second Joint AMS-IMU Meeting, Haifa, Israel, June 2014
- *Co-Organizer*, Special Minisymposium on Optimal Control and Its Applications, SIAM Conference on Control and Its Applications, San Diego, CA, 2013
- *Co-Organizer*, Special Cluster on Variational Analysis at the 21st International Symposium on Mathematical Programming, Berlin, Germany, August 2012
- *Co-Organizer*, International Conference of the European Operational Research Society (EURO2012), Vilnius, Lithuania, July 2012
- *Co-Director*, International Conference on Variational Analysis and Optimization, Erice, Italy, May 2012
- *Coordinator* of special sessions, International Conference on Numerical Analysis and Optimization, Dhahran, Saudi Arabia, December 2011
- *Co-Organizer*, Special Session on Variational Analysis and Applications, at the International Conference on Numerical Analysis and Optimization, Dhahran, Saudi Arabia, December 2011
- *Co-Organizer*, International Workshop on Large Scale Optimization and Applications, Toronto, Canada, October 2011
- *Co-Organizer*, 13th Midwest Optimization Meeting, Toronto, Canada, October 2011
- *Co-Organizer*, Special Minisymposium on Optimal Control and Its Applications, SIAM Conference on Control and Applications, Baltimore, MD, July 2011
- *Co-Organizer*, 12th Midwest Optimization Meeting, Detroit, MI, October 2010
- *Co-Organizer*, Special Cluster on Variational Analysis at the 20th International Symposium on Mathematical Programming, Chicago, IL, August 2009
- *Organizer*, Special Cluster on Variational Analysis and Its Applications, 5th World Congress of Nonlinear Analysts, Orlando, FL, 2008
- *Co-Organizer*, International Conference on Nonlinear Analysis and Optimization, Haifa, Israel, 2008
- *Co-Organizer*, Special Minisymposium on Variational Analysis in Optimization and Control, SIAM Conference on Control and Its Applications, San Francisco, CA, 2007
- *Panel Member*, National Science Foundation FRG (Focuses Research Groups in the Mathematical Sciences) Panels, 2006–2007
- *Member of the Advisory Board*, Encyclopedia of Optimization, 2006–present
- *Co-Organizer*, International Conference on Asymptotic Analysis of Stochastic Processes, Non-parametric Estimation, and Related Topics, Detroit, MI, 2006
- *Organizer*, Special Session on Equilibrium Problems with Equilibrium Constraints, 1st International Conference on Continuous Optimization, Troy, NY, 2004
- *Organizer*, Special Cluster on Variational Analysis and Its Applications, 4th World Congress of Nonlinear Analysts, Orlando, FL, 2004

- *Organizer*, 6th Midwest Optimization Meeting, Detroit, MI, 2006
- *Co-Organizer*, Special Cluster on Variational Methods in Optimal Control, 41th IEEE Conference on Decision and Control, Las Vegas, NV, 2002
- *Co-Organizer*, Special Session on Variational Analysis and Applications, 1st Joint AMS-UMI Meeting, Pisa, Italy, 2002
- *Co-Organizer*, Special Minisymposium on Variational Analysis in Optimal Control, SIAM Conference on Control and Its Applications, San Diego, CA, 2001
- *Panel Member*, National Science Foundation REU (Research Experience for Undergraduates) Panel, 2000
- *Organizer*, Special Session on Variational Analysis and Optimization, 3rd World Congress of Nonlinear Analysts, Catania, Italy, 2000
- *Co-Organizer*, Special Session on Optimization and Variational Analysis, AMS Central Sectional Meeting, Detroit, MI, 1997
- *Organizer*, Special Session on Nonsmooth Analysis and Optimization, 2nd World Congress of Nonlinear Analysts, Athens, Greece, 1996
- *Topic Coordinator on Nonsmooth Optimization*, 15th International Symposium on Mathematical Programming, Ann Arbor, MI, 1994
- *Vice-Chair for Short Papers*, 33rd IEEE Conference on Decision and Control, Orlando, FL, 1994
- *Co-Organizer*, International IMA Workshop on Nonsmooth Analysis and Geometric Methods in Optimal Control, Minneapolis, MN, 1993
- *Organizer*, Special Session on Nonsmooth Analysis and Optimization, 1st World Congress of Nonlinear Analysts, Tampa, FL, 1992
- *Member* of Organizing and Program Committees of various national and international meetings
- *Referee* for various journals, publisher houses, grant agencies, proceedings, etc.

Invited Presentations

More than 700 invited conference and colloquium/seminar talks since 1989 including:

Selected Keynote and Plenary Lectures

- *International Conference on Numerical Computations: Theory and Algorithms*, Lamerzia Terme, Italy, June 2013
- *International Conference on Operations Research and Optimization*, Tehran, Iran, January 2013
- *International Conference on the Theory, Methods and Applications of Nonlinear Equations*, Kingsville, TX, December 2012
- *III International Conference on Optimization Methods and Applications (OPTIMA)*, Costa da Caparica, Portugal, September 2012
- *International Workshop on Variational Analysis and Optimization*, Tabriz, Iran, August-September 2012
- *43rd Annual Iranian Mathematical Conference*, Tabriz, Iran, August 2012.

- *International Workshop on Generalized Differentiation*, Berlin, Germany, August 2012
- *International Conference on Set-Valued Optimization with Applications to Finance*, Wittenberg, Germany, August 2012
- *IX Brazilian Workshop on Continuous Optimization*, Piaui, Brazil, July-August 2012
- *International Conference on Controlled Deterministic and Stochastic Systems*, Iasi, Romania, July 2012
- *International Conference on Constructive Nonsmooth Analysis and Related Topics*, St. Petersburg, Russia, June 2012
- *Czech-German-Slovak Conference on Mathematical Methods in Economy and Industry*, Berlin, Germany, June 2012
- *International School on Variational Analysis and Applications*, Hanoi, Vietnam, May-June 2012
- *International Workshop on Optimization and Variational Analysis*, Milan, Italy, May 2012
- *International Conference on Variational Analysis*, Erice, Italy, May 2012
- *Spring School on Variational Analysis*, Paseky, Czech Republic, April 2012
- *1st Moroccan-Portuguese Meeting on Applied Mathematics*, Errachidia, Morocco, April 2012
- *10th International Conference on Operations Research*, Havana, Cuba, March 2012
- *3rd Latin American Conference on Optimization and Control*, Valparaiso, Chile, January 2012
- *International Conference on Numerical Analysis & Optimization Theory and Applications*, Dhahran, Saudi Arabia, December 2011
- *International Conference on Optimization and Convex Analysis*, Barcelona, Spain, October 2011
- *International Workshop on Variational Analysis and Applications*, Lisbon, Portugal, October 2011
- *International Workshop on Large Scale Optimization and Applications*, Toronto, Canada, October 2011
- *8th ISAAC Congress*, Moscow, Russia, August 2011
- *International Workshop on Variational Analysis*, Messina, Italy, June 2011
- *7th International Conference on Applied Mathematics and Scientific Computing*, Trogir, Croatia, June 2011
- *International Workshop on Computational and Analytical Mathematics*, Burnaby, Canada, May 2011
- *International Conference on Approximation and Optimization at the Caribbean*, Costa del Sol, El Salvador, March 2011
- *International Conference on Operations Research and Optimization*, Tehran, Iran, January 2011
- *International Seminar on Variational Analysis, Optimization and Applications*, Bayonne, France, October 2010
- *10th International Conference on Parametric Optimization and Related Topics*, Karlsruhe, Germany, September 2010
- *Second Latin American Conference on Optimization and Control*, Rosario, Argentina, July 2010
- *International Workshop on Optimization and Variational Analysis*, Elche, Spain, June 2010

- *International Conference on Optimization of Dynamical Systems and Applied Mathematics*, Tbilisi, Georgia, June 2010
- *CIMPA-UNESCO School on Variational Inequalities and Related Topics*, Hanoi, Vietnam, May 2010
- *International Workshop on Analysis, Optimization and Applications*, Les Houches, France, January 2010
- *International Workshop on Optimization and Related Topics*, Haifa, Israel, January 2010
- *Winter Meeting of the Canadian Mathematical Society*, Windsor, Canada, December 2009
- *International Workshop on Mathematical Economics*, Tokyo, Japan, November 2009
- *International Seminar on Optimization*, Lima, Peru, October 2009
- *International Workshop on Approximation and Optimization*, Moscow, Russia, September 2009
- *8th Brazilian Workshop on Continuous Optimization*, Rio de Janeiro, Brazil, July 2009
- *International Workshop on Nonsmooth Optimization*, Varese, Italy, May 2009
- *International Workshop on Variational Analysis and Applications*, Erice, Italy, May 2009
- *International Conference on Variational Analysis and Optimization*, Kaohsiung, Taiwan, November 2008
- *International Workshop on Variational and Nonsmooth Analysis*, Santiago, Chile, November 2008
- *International Workshop on Optimization*, Miguel Hernandez University, Elche, Spain, October 2008
- *International Conference on Nonlinear Analysis and Optimization Problems*, Petrovac, Montenegro, October 2008
- *American Mathematical Society, Central Section Meeting*, Kalamazoo, MI, October 2008
- *International Conference on 50 Year of Optimal Control*, Bedlewo, Poland, September 2008
- *International Conference Calculus of Variations and Its Applications: from Engineering to Economy*, Lisbon, Portugal, September 2008
- *5th World Congress of Nonlinear Analysts*, Orlando, FL, July 2008
- *International Conference Controlo 2008*, Vila Real, Portugal, July 2008
- *NSF Summer Workshop on Applications of Analysis to Mathematical Biology*, Eau Claire, WI, July 2008
- *International Conference on Nonlinear Analysis and Optimization*, Haifa, Israel, June 2008
- *5th International Conference on Differential Equations and Dynamical Systems*, Baltimore, MD, May 2008
- *International Conference on Nonsmooth Analysis, Optimization and Applications*, Erice, Italy, May 2008
- *International Conference on Optimal Control of Coupled PDE*, Oberwolfach, Germany, March 2008
- *International Conference on Approximation and Optimization at the Caribbean*, San Andres Island, Colombia, March 2008
- *40th Annual Convention of the Operational Research Society of India*, Delhi, India, December

2007

- *International Workshop on Optimization and Its Application*, Delhi, India, November–December 2007
- *International Seminar on Optimization and Related Areas*, Lima, Peru, October 2007
- *West Coast Optimization Meeting*, Vancouver, Canada, October 2007
- *International Conference on Functional Analysis and Optimization*, Bedlewo, Poland, September 2007
- *23rd IFIP Conference on Systems Modelling and Optimization*, Krakow, Poland, July 2007
- *International Symposium on Functional and Numerical Analysis*, Kaohsiung, Taiwan, June 2007
- *5th International Conference on Nonlinear and Convex Analysis*, Hsinchu, Taiwan, May–June 2007
- *International Conference on Nonlinear Analysis and Optimization*, Isfahan, Iran, April 2007
- *International Spring School on Optimization and Applied Mathematics*, HoChiMinh City, Vietnam, March 2007
- *International Workshop on Computational Optimization and Analysis of Systems*, Kanpur, India, February 2007
- *International IFAC Workshop on New Approaches in Dynamic Optimization to Assessment of Economics and Environmental Systems*, Laxenburg, Austria, December 2006
- *International Conference on Advances in Control of Partial Differential Equations*, Baltimore, MD, October 2006
- *International Conference on Applied Analysis and Differential Equations*, Iasi, Romania, September 2006
- *International Conference on Variational Analysis and Partial Differential Equations*, Erice, Italy, July 2006
- *International Conference on Views of ODEs*, Aveiro, Portugal, June 2006
- *International Workshop on Variational Analysis and Optimization*, Harbin, China, June 2006
- *International Conference on Nonlinear Programming with Applications*, Shanghai, China, May–June 2006
- *International Meeting of the Atlantic Association for Research in the Mathematical Sciences*, Halifax, Canada, January 2006
- *8th International Conference on Parametric Optimization and Related Topics*, Cairo, Egypt, November–December 2005
- *3rd Sino-Japan Optimization Meeting*, Singapore, October–November 2005
- *International Conference dedicated to Gyula Farkas*, Cluj–Napoca, Romania, August 2005
- *International Conference on Optimization and Control*, Moscow, Russia, May 2005
- *International Conference on Science for Education, Industry, and Economy*, Minsk, Belarus, May 2005
- *International Conference on Control and Optimization with Industrial Applications*, Baku, Azerbaijan, May 2005

- *7th French–Latin American Congress on Applied Mathematics*, Santiago, Chile, January 2005
- *International Mathematical Conference on Extremal Problems*, Moscow, Russia, December 2004
- *48th Annual Meeting of the Australian Mathematical Society*, Melbourne, Australia, September–October 2004
- *International Workshop on Optimal Control for Ordinary Differential Equations*, Warsaw, Poland, August–September, 2004
- *International Workshop in Variational Limits*, Rehovot, Israel, June 2004
- *International Workshop on Dynamical Systems and Control*, Haifa, Israel, June 2004
- *International Conference on Analysis and Its Applications*, Canghua, Taiwan, May 2004
- *International Workshop on Control, Set-Valued Analysis and Applications*, University of French Antilles and Guyana, Pointe-a-Pitre, Guadeloupe, April 2004
- *7th International Conference on Approximation and Optimization in the Caribbean*, Leon, Nicaragua, March 2004
- *1st International Andean Conference—3rd Colombian Congress on Operations Research*, Cartagena, Colombia, March 2004
- *International Conference on Modeling and Optimization*, Temuco, Chile, January 2004
- *6th International Conference of the Association of Asia–Pacific Operational Research Societies*, New Delhi, India, December 2003
- *25th Brazilian Conferences on Applied and Computational Mathematics*, Rio Preto, Brazil, September 2003
- *International Conference on Variational Analysis and Applications*, Erice, Italy, June–July 2003
- *7th International Symposium on Generalized Convexity/Monotonicity*, Hanoi, Vietnam, August 2002
- *4th Brazilian Workshop on Continuous Optimization*, Rio de Janeiro, Brazil, July 2002
- *International Conference on Applied Mathematics*, Kiev, Ukraine, June 2002
- *West Coast Optimization Meeting*, Seattle, WA, April 1997
- *International Workshop on Well-Posedness in Optimization and Related Topics*, Warsaw, Poland, September 2001
- *3rd World Congress of Nonlinear Analysts*, Catania, Sicily, July 2000
- *6th International Conference on Parametric Optimization and Related Topics*, Dubrovnik, Croatia, October 1999
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- *International Workshop on Differential Inclusions and Qualitative Reasoning in Global Change*, Potsdam, Germany, May 1999
- *International Conference on Control of Distributed Parameter and Stochastic Systems*, Hangzhou, China, June 1998
- *French–Chinese Workshop on Geometry of Banach Spaces*, Beijing, China, June 1998
- *International Workshop on the Calculus of Variations and Related Topics*, Haifa, Israel, March 1998

- *International Workshop on Relaxation Methods*, Rehovot, Israel, March 1998
- *West Coast Optimization Meeting*, Vancouver, Canada, April 1997
- *International Conference on Optimal Control: Theory, Algorithms, and Applications*, Gainesville, FL, February 1997
- *International Conference on Control and Estimation of Distributed Parameter Systems*, Vorau, Austria, July 1996
- *Spring 1996 Meeting of the Mathematical Association of America (Michigan Section)*, Adrian, MI, May 1996
- *3rd International Conference on Approximation and Optimization*, Pueblo, Mexico, October 1995
- *8th International Workshop on Dynamics and Control*, Sopron, Hungary, July 1995
- *International Workshop on Nonsmooth Analysis and Its Applications*, Pau, France, June 1995
- *International Workshop on Set-Valued Calculus and Nonsmooth Analysis*, St. Petersburg, Russia, May–June 1995
- *International Workshop on Nonsmooth Analysis and Applications*, Santa Barbara, CA, April 1995
- *International Workshop on Nonsmooth Analysis and its Applications*, Banach Mathematical Center, Warsaw, Poland, May 1993
- *International Workshop on Nonsmooth Analysis and Geometric Methods in Deterministic Optimal Control*, Institute for Mathematics and its Applications, Minneapolis, MN, February 1993
- *International Conference on Nonsmooth Analysis and its Applications to Mathematical Economics*, Baku, Azerbaijan, October 1991
- *International Workshop on Optimization and Nonlinear Analysis*, Haifa, Israel, March 1990
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- *Topics in Stochastic Analysis and Nonparametric Estimation* (with P. L. Chow and G. Yin), The IMA Volumes in Mathematics and Applications **145**, 210 pp., Springer, New York, 2008.
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- Full stability in constrained optimization (with R. T. Rockafellar and M. E. Sarabi), submitted to *SIAM J. Optim.*
- Second-order variational analysis and characterizations of tilt-stable optimal solutions in finite and infinite dimensions (with T. T. A. Nghia), submitted to *Math. Program.*
- Sufficient optimality condition in multiobjective problems with equilibrium constraints (with T. Q. Bao), submitted to *J. Optim. Theory Appl.*
- Nonsmooth cone-constrained optimization with applications to semi-infinite programming (with T. T. A. Nghia), submitted to *Math. Oper. Res.*
- Optimal control of semilinear unbounded evolution inclusions with functional constraints (with D. Wang), submitted to *J. Optim. Theory Appl.*
- Approximate maximum principle for discrete approximations of optimal control systems with nonsmooth endpoint constraints (with I. Shvartsman), to appear in *ESAIM-Cal. Var. Contr. Optim.*
- Tilt stability in nonlinear programming under Mangasarian-Fromovitz constraint qualification (with J. V. Outrata), to appear in *Kybernetika*
- Sufficient conditions for global weak Pareto solutions in multiobjective optimization (with T. Q. Bao), *Positivity* **16** (2012), 579–602.
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