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## I EDUCATION AND DEGREES

M.S. in Mathematics, University of Warsaw, Warsaw (Poland), 1972  
Ph.D. in Mathematics, University of Warsaw, Warsaw (Poland), 1975

## II EMPLOYMENT

Polish Academy of Sciences, Warsaw, Poland, Control Theory Institute, Assistant Professor, 1975–1980  
University of California, Los Angeles, CA, Postdoctoral Fellow 1977–1980  
University of Florida, Gainesville, FL, Mathematics Department, Assistant Professor, 1980–1981; Associate Professor, 1981–1984 (tenured); Professor, 1984–1987.  
University of Virginia, Charlottesville, VA, Department of Applied Mathematics, Professor (tenured), 1987–1998; Department of Mathematics, Professor (tenured) 1998–2011;  
Commonwealth Professor of Mathematics, 2011–present.  
University of Memphis, Memphis, TN, Department of Mathematical Sciences, Chair  
Distinguished University Professor, September 2013 -

### *Visiting Appointments and Long-Stay Visits*

1976 January–March, Department of Mathematics, Liege University, Belgium, Visiting Assistant Professor  
1984, 1991 Summer, Scuola Normale Superiore, Pisa, Italy, CNR Fellow and Visiting Professor  
1986, 1991 August, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, Visiting Professor  
1984, 1990, 1991, 1992 July, Department of Mathematics, University of Bologna, Bologna, Italy, Visiting Professor  
1992 October–December (sabbatical leave), Department of Mathematics, University of Trento, Italy, Visiting Professor  
1992 November (sabbatical leave), NSF IMA Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, IMA Fellow  
1994 June–July, Istituto di Calcolo Scientifico (IAC) “Al Picone” Rome, Italy, CNR Fellow  
1995 March, NSF IMA Institute of Mathematics and its Applications, University of Minnesota, Minneapolis, IMA Fellow  
1997, 1998, Summer, Scuola Normale Superiore, Pisa, Italy, Visiting Professor  
2001 June–July NSF IMA Institute of Mathematics and its Applications, University of Minnesota, Minneapolis, IMA Fellow  
2002 Spring Semester, Scuola Normale Superiore, Pisa, Italy, Visiting Professor  
2003 January, Mittag Leffler Institute, Stockholm (Drujholm), Sweden  
2005 May, Universite of Nice and INRIA -Sophie Antipolis. France  
2007 October, University of California, Los Angeles.  
2010 Summer, Department of Mathematics, University of Warsaw, Poland  
2011 October, University of Graz, Austria.  
2011, July, Polish Academy of Sciences, Systems Research Institute, Warsaw.  
2012, August, University of Rio de Janeiro and University of Maringa, Brazil.  
2013, May, Polish Academy of Sciences, Systems Research Institute, Warsaw.  
2016–Spring, IMA (Institute of Mathematics and Applications), University of Minnesota.

### III HONORS AND AWARDS

- Awarded by the AACC [American Automatic Control Council] the 2019 Richard E. Bellman Control Heritage Award.
- Awarded SIAM Fellow -2019.
- Plenary Speaker at ETAMM 2018 [Emerging Trends in Applied Mathematics and Mechanics] , Cracov, June 18, 2018.
- Plenary Lecture at the Conference "Paths in Mathematical Control Theory", Torino, Italy, February 27,2018.
- Plenary speaker at the Oberwolfach Lectures Seminar *Mathematical Theory of Flow-Fluid Structure Intercations* , Oberwolfach, Germany, November 21-26,2016.
- Invited one hour address at the AMS Conference, Stony Brook, March 2016.
- Plenary Speaker at IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena, Georgia Center, University of Georgia, April 01-04, 2015.
- Induced to the 2015 Class of AMS Fellows . *for contribution to control theory of PDE's, mentorship and service to professional societies.*
- Awarded the Kosciuszko Foundation Distinguished Fellow of the Collegium of Eminent Scientists-2014
- Plenary Speaker at SIAM-SEAS, University of Birmingham, Alabama, March 20-25, 2015.
- Plenary Speaker at HYP-RIO 2014, IMPA, Rio de Janeiro, July 26-August 1, 2014.
- Ellis B. Stouffer Distinguished Lecture, Department of Mathematics, University of Kansas . December 3, 2013.
- Bold Aspiration Lecture Series -sponsored by the Provost Office , 2013-2014 Series. December 2013,University of Kansas.
- SIAM Reid Prize Lecture, Hyatt Regency, Baltimore, July 2011.
- Listed by StatStats.org in Top 26 Women Professors in Virginia, May 9, 2013. Top 26 Women Professors in Virginia [onlineschoolsvirginia.com/top-college-professors-in-virginia/women/](http://onlineschoolsvirginia.com/top-college-professors-in-virginia/women/)
- Commonwealth Professor of Mathematics, as of August 2011 (Endowed Chair), University of Virginia.
- Winner of Reid's Award: SIAM 2011 W.T. Idalia Reid Prize for contribution Differential Equations and Control Theory July 27, 2011.
- *ISI's Highly Cited Researcher*, <http://isihighlycited.com> (one of the 250 most highly cited mathematicians worldwide for the period 1981–1999).  
*"These individuals are the most highly cited within each category for the period 1981–1999, and comprise less than one-half of one percent of all publishing researchers."*  
 As of January 2019, MathSciNet shows 6524 citations by 1588 authors (see <http://www.ams.org/mathscinet/>).
- Eminent Scientist -The Kosciuszko Foundation Collegium List: <http://www.thekf.org.programs/eminentscientists>.
- Receptient of the Presidential Professorship in Sciences, Warsaw, Presidential Palace, October 9, 2012.
- Featured review by *Math Reviews* in 2001, Research monograph: *Control Theory for Partial Differential Equations: Continuous and Approximation Theories*, Vol.1, *Abstract Parabolic Systems*, 680 pp., January 2000 (with R. Triggiani).
- Featured review by *Math Reviews* in 2001, Research monograph: *Control Theory for Partial Differential Equations: Continuous and Approximation Theories*, Vol.2, *Abstract Hyperbolic-Like Systems with a Finite Time Horizon*, 422 pp., January 2000 (with R. Triggiani).

- Polish Academy of Sciences Award, overall scientific contributions, 1979.
- Creativity Extension Award, National Science Foundation, 1987 .
- Silver Core Award, International Federation for Information Processing (IFIP), 1989.
- University Research Initiative Award, AFOSR, 1989–1992.
- Barrett Lectures: Principal Lecturer, Univ. of Tennessee, March 1997.
- IEEE Distinguished Lecturer, 1999–2003.
- CMBS-NSF Conference: *Mathematical Control Theory of Coupled PDE's*, Principal Lecturer (10 lectures), Univ. of Nebraska, Aug. 4–9, 1999.
- Distinguished Visiting Scholar: Texas Tech. University, March 2000.
- Principal Lecturer, Control Theory Series, 10 Lectures, Univ. of Jyväskylä, Finland, August 15–28, 1993.
- Principal Lecturer: Autumn School on Evolutions and Applications (5 lectures), Trento, Italy, Nov. 2001.
- 2005 J. Barrett Memorial Lectures: Main Speaker, University of Tennessee, April 2005.
- Principal Lecturer Summer School: SISSA : Nonlinear Hyperbolic Equations , Trieste, May 2012.
- Main Lecturer Summer School on Nonlinear Evolutions in PDE's, Koc University, Istanbul, July 2012.
- Principal Lecturer in The Summer School: Recent Advances in PDE's with Applications, University of Milano, Milano, June 17-21, 2013.
- IEEE Fellow with the citation: *For Contribution to Boundary Control Systems*, since 2004.
- Appointed (January 2006-2010) to The International Advisory Board of the Polish Academy of Sciences.
- Nominating Committee for Nomination of Candidates for the 2008 (24<sup>th</sup>), 2010 (26-th), 2011 (27-th) , 2013 (29-th), 2015 (31-st), 2016 (32-nd) JAPAN Prize in Science and Technology <https://jpns.japanprize.jp/>
- Nominating Committee for the *Kyoto Prize* . Innamori Foundation, Japan.
- Nominating Committee for the SIAM 2014 W.T. Reid's Prize.
- The *Technical Achievement Award* by ICNPAA, *International Congress Nonlinear Analysis and Applications*, with the citation: *For Outstanding Contribution to Nonlinear Mathematical Analysis*, June 22, 2006, Budapest, Hungary.
- Plenary (one-hour) lectures delivered at various national and international meetings, including AMS, SEARCDE, IEEE, IFIP, AIMS, CNRS, and SIAM meetings (see section “Plenary Speaker at Conferences”). Recent Plenary speaker (one of the three-four speakers) at the 29th Annual Southeastern–Atlantic Conference on Differential Equations (SEARCDE-29), Mercer University, GA, October 16–17, 2009, MTNS (Mathematical Theory of Networks and Systems, Fez, Maroco, May 25-28, 2009; ICNPAA 2010 World Congress, Mathematical Problems in Engineering Aerospace and Sciences, Sao Jose dos Campos, Brazil, June 30-July 4, 2010, W.T. Reid Lecture at SIAM 2011 Control Conference, Hyatt Regency, Baltimore, July 24-27, 2011, International School on Recent Advances in PDE's- Milano, June 17-22, 2013, HYP2014-XV International Conference on Hyperbolic Problems, IMPA. Rio de Janeiro, July 28-August 1, 2014, SIAM - SEAS Conference Birmingham, 2015. IMACS Conference Univ of Georgia, May 2015, AMS Conference in Stony Brooke, March 2016, 7-th GPCO Conference, Bedlewo, Polsh Academy of Sciences, August 27-30, 2017, Paths in Mathematical Control Theory, Torino, Italy, March 23-25, 2018.
- Frequently invited to contribute original research papers for special volumes. Recently, in honor of Jacque Luis Lions, A.V. Balakrishnan, Herbert Amann, Giuseppe DaPrato, Gunther Lumer, Peter Lax.

- Awarded Honorary European Union Visiting Professorship at the Department of Mathematics, University of Warsaw, 2010 Poland.

#### IV RESEARCH INTERESTS: Control Theory of Partial Differential Equations, Applicable Analysis

##### 1. *Partial Differential Equations and Related Control Theory*

Mixed problems for parabolic and hyperbolic partial differential equations, and related optimization theory. Differential and algebraic Riccati operator equations for optimal control problems with boundary controls.  $H_\infty$  theory for PDE's. "Sharp" regularity theory of solutions in the interior and of their traces on the boundary. Boundary stabilization, controllability problems for linear and nonlinear parabolic and hyperbolic PDE's, as well as coupled systems of PDE's (parabolic-hyperbolic, or hyperbolic-hyperbolic coupling). Mathematical control of systems arising in nonlinear elasticity. Noise redirection control, structural acoustic problems, thermoelastic systems and more generally interactive structures. Mathematical control theory of coupled partial differential equations. Theory of dissipative PDE systems and compact finite-dimensional attractors.

##### 2. *Numerical Analysis*

Finite element and spectral methods for partial differential equations and related control problems. Includes rates of convergence of numerical approximations to mixed problems for partial differential equation, with particular emphasis on non-smooth boundary and initial data. Numerical approximations of differential and algebraic operator Riccati equations arising in boundary optimal control problems. Compensation, estimation theory for PDE's including numerical aspects. Analysis of compensator design and partially observed PDE's.

##### 3. *Optimization Theory*

Applications of abstract optimization theory in the context of general dynamics, including partial differential equations and functional differential equations. Optimal control problems including minimal time, minimal cost problems governed by coupled systems of PDE's.

##### 4. *Nonlinear Dynamical PDE Systems*

Long-time behavior, attractors, inertial manifolds in hyperbolic-like systems. Optimization, control and long-time behavior of coupled/hybrid PDE systems. Stability and controllability of PDE interactive systems with control on the interface between the two media: (1) structural acoustic interactions - coupling between acoustic wave equation and nonlinear plate equation, (2) fluid structure interactions - coupling between Navier Stokes equation and dynamic system of elasticity,

#### V GRANTS (Principal Investigator)

##### V(a) Research grants

##### 1. **National Science Foundation. (NSF)**, Applied Mathematics, with R. Triggiani, 1981–1984

National Science Foundation, Applied Mathematics, with R. Triggiani, 1984–1987

National Science Foundation grant to sponsor International Conference on Control of PDE's at the University of Florida, Feb. 3–6, 1986

National Science Foundation, 1987–1989 (Creativity Extension Award with R. Triggiani)

National Science Foundation, Applied Mathematics, with R. Triggiani, 1989–1992

Research Group Award, National Science Foundation, with R. Triggiani, 1989–1992

National Science Foundation, Applied Mathematics, with R. Triggiani, 1992–1995

National Science Foundation, International Exchange Program with France, with R. Triggiani and J. Zolesio (Univ. of Nice), 1993–1996

NSF-American Mathematical Society grant to organize AMS Summer Research Conference on Optimization and PDE's, July 1996

National Science Foundation, Applied Mathematics, with R. Triggiani, 1995–1998

National Science Foundation, Applied Mathematics, with R. Triggiani, 1998–2001

National Science Foundation and NRC, International Grant (Russia) (joint with I. Chueshov), 2001

National Science Foundation, Applied Mathematics, with R. Triggiani, 2001–2006  
 National Science Foundation, International Grant with INRIA (France), 2003–2006  
 National Science Foundation, Applied Mathematics, with R. Triggiani, 2006–2011  
 National Science Foundation, Applied Mathematics, with R. Triggiani, 2011–2016.  
 National Center for Science, Applied Mathematics, with K. Szulc and A. Zochowski, 2015–2018  
 National Science Foundation, Applied Mathematics, with R.T Triggiani , 2017–2020.  
 National Science Foundation, (NSF-DMS ) , DUE IUSE Research , co-Pi with J. Haddock PI. 2018–2022.

2. **Air Force Office of Scientific Research (AFOSR)**, with R. Triggiani, 1984–1985  
 Air Force Office of Scientific Research, with R. Triggiani, 1985–1986  
 Air Force Office of Scientific Research, with R. Triggiani, 1986–1987  
 Air Force Office of Scientific Research to sponsor International Conference at the University of Florida, Feb. 3–6, 1986  
 Air Force Office of Scientific Research, with R. Triggiani, 1987–1989  
 University Research Initiative (jointly with A. Manitius [G. Mason University], and R. Triggiani), Air Force Office of Scientific Research, 1989–1992  
 Air Force Office of Scientific Research, with R. Triggiani, 2009–2012  
 Air Force Office of Scientific Research , with R. Triggiani, 2012–2015.
3. **NATO** Grant (joint with L. Pandolfi, Univ. of Torino, Italy and R. Triggiani), 1993–1997
4. **NASA** Grant, Virginia Consortium, support of graduate students, 1992–2000  
 NASA Grant, VGRC, support of graduate students, 2005–2008  
 NASA Grant, VGRC, support of graduate students, 2009–2013.
5. **Army Research Office (ARO)**, with R. Triggiani, 1996–1999  
 Army Research Office (ARO), with R. Triggiani, 1999–2003  
 Army Research Office (ARO), with R. Triggiani, 2003–2006

#### **V(b) Conference grants**

1. IFIP Grant to sponsor International Conference on Control of PDE's, at the University of Florida, Feb. 3–6, 1986
2. NSF Grant (with G. Chen, Texas A&M Univ.) to sponsor Symposium on Control of PDE's (in honor of D. Russell), Texas A&M, College Station, October 21, 1993
3. SIAM Grant (with S. Cox, Rice Univ.), Symposium on Industrial Problems in Control, San Diego, CA, July 22–23, 1994
4. IFIP Grant (with M. Malanowski, Polish Academy of Sciences) to sponsor IFIP Conference on Modeling and Optimization with Applications to Engineering, Warsaw, Poland, July 17–21, 1995
5. AMS-NSF Grant (with S. Cox, Rice Univ. Houston) for AMS Summer Research Conference on Optimization and PDE's, Mt. Holyoke, June 16–20, 1996
6. NSF-IMA Grant (with G. Uhlman, Univ. Washington, C. Crook, Univ. of Pennsylvania) to sponsor IMA Workshop on Geometric Methods in Inverse Problems and Control, Univ. of Minnesota, Minneapolis, July 6–27, 2001
7. IFIP and CNRS Grant (with J. P. Zolesio INRIA, Nice, France) to sponsor 21st IFIP Conference on System Modeling and Optimization, Sophia Antipolis, France, July 21–23, 2003
8. IFIP and CNR Grant (with L. Pandolfi, Univ. of Torino) to sponsor 22nd IFIP Conference on Modeling and Optimization, Torino, Italy, July 2005

9. NSF-AMS Grant (with R. Triggiani, F. Ancona, Univ. of Bologna, W. Littman, Univ. of Minnesota) to sponsor AMS Summer Research Conference on Control of Nonlinear PDE Systems, Snowbird, Utah, July 3-8, 2005
10. IFIP Grant (with W. Mitkowski, Jagiellonski Univ. Krakow) to sponsor 23rd IFIP Conference on Modeling and Optimization, Krakow, Poland, July 23-27, 2007, Chair of IPC
11. NSF Grant (with M. Krstic, Univ. of San Diego) to sponsor NSF Workshop Horizons in Infinite Dimensional Deterministic and Stochastic Systems with Applications to Engineering, Univ. of California, Los Angeles, UCLA, January 30-February 2, 2009
12. SEARCDE 2013- South Eastern Regional Conference on Differential Equations [co-Pi with G. Goldstein, J. Goldstein, R. Triggiani].
13. NSF-BIRS Grant (with L. DeTeresa and K. Morris) fir Conference on New Trends in Infinite Dimensional Control Theory, Banff International Research Center, July 16-21, 2017, Banff, Canada.

## VI Ph.D. THESES DIRECTED (first employment noted in parenthesis)

1. Sung Chang (Assistant Professor, Mathematics Department, Dang University, Busan-Korea), “Riccati Equations for Nonsymmetric and Nondissipative Hyperbolic Systems,” University of Florida, Dec. 1985.
2. Gilbert Choudoury (Assistant Professor Mathematics Department, University of Cincinnati). “Fully discrete Galerkin approximations of parabolic boundary value problems with non-smooth boundary data,” University of Florida, Sept. 1987.
3. Elisabeth Bradley (Assistant Professor, Department of Mathematics, University of Louisville, KY). “Local and global exponential stabilization results for nonlinearly perturbed plates models where nonlinearities appear on the boundary,” University of Virginia, May 1991.
4. Mary Ann Horn (NSF and IMA Postdoctoral Fellowship in the Department of Mathematics, University of Minnesota, Minneapolis). “Exact controllability and uniform stabilization of the Euler Bernoulli and Kirchoff plate equations with boundary feedback acting via bending moments,” University of Virginia, May 1992.
5. Daniel Tataru (Assistant Professor, Department of Mathematics, Northwestern University, Evanston Recipient of Sloan Fellowship, 1995). Co-advised with R. Triggiani. “A priori pseudoconvexity energy estimates in domains with boundary and exact boundary controllability for conservative P.D.E.,” University of Virginia, May 1992.
6. Erik Hendrickson (Assistant Professor, Dept. of Mathematics, University of Arkansas and NRC Fellowship at Wright Patterson AFOSR Lab, Dayton, Ohio). “Approximation theory for compensator design for partially observed hyperbolic systems,” University of Virginia, May 1995.
7. George Avalos (Assistant Professor, Dept. of Mathematics, Texas Tech University and NSF-IMA Postdoc at the IMA Institute at the University of Minnesota). “An analysis and regulator theory for the active control of a system of PDE’s arising in smart structures and materials,” University of Virginia, May 1995.
8. Richard Marchand (NRC Postdoctoral Fellowship at the Army Research Laboratory, AMSRL-WT-PD, Aberdeen, MD). “Approximations of control problems arising in dynamics of shells,” University of Virginia, 1996.
9. John Ong (Assistant Professor, Mary Baldwin College). “Global existence, uniqueness and stability of a quasilinear hyperbolic equation with boundary dissipation,” University of Virginia, Dec. 1997.
10. Guancgao Ji (Postdoc Fellow at Mittag Leffler Institut, Stockholm and Assistant Professor, Mathematics Department, Texas Tech. Univ., Lubbock). “Boundary stabilizations of PDE’s—theory and algorithms,” University of Virginia, 1998.
11. James Masters (Cycorp, Artificial Intelligence Software Development Company, Austin, Texas, Credit Suisse, NY, Data Scientist Q.A. ). “Exact boundary controllability and uniform stabilization of selenoidal electromagnetic fields in a bounded region without geometric conditions,” University of Virginia, Dec. 1999.

12. William Heyman (Lockheed-Martin Research Corp., Philadelphia, PA). "Finite-dimensional attractors in nonlinear elasticity," University of Virginia, 1998.
13. Catherine Lebedzik (NSF Postdoctoral Fellowship followed by tenure-track Assistant Professorship at Mathematics Department, Wayne State University, Detroit, MI), "Stability properties of structural acoustic models with thermoelastic effects," University of Virginia, May 2001.
14. Cavit Hafizoglu (Enterprise Risk Management, SunTrust, Atlanta, Georgia, Well Fargo, Charlotte) "Linear quadratic boundary/point control of stochastic PDE's with unbounded coefficients," University of Virginia, August 2006.
15. Daniel Toundykov (3-year Postdoctoral Fellow at the Mathematics Department, University of Nebraska, Lincoln, Associate Professor TT University of Nebraska Lincoln. ). "Long-term dynamics of semilinear wave equation with localized nonlinear dissipation, critical source term and mixed boundary conditions," University of Virginia, May 2007.
16. Amjad Tuffaha (3-year Postdoctoral Fellow at the Mathematics Department, University of Southern California (USC), Los Angeles, CA) "Wellposedness, solvability and optimal control of coupled partial differential equations with an interface," University of Virginia, May 2007.
17. Inger Daniels (Postgraduate fellowship at Tepper School of Business, CMU, Carnegie Mellon, Pittsburgh, V-President Citi Investment Research and Analysis, NY, 2014- present Director of Academic Excellence, Wake Forest Iniversity- Business School.), "Wellposedness of a nonlinear structural acoustic model with a Boussinesq plate equation," University of Virginia, May 2008.
18. Lorena Bociu (NSF International Research Fellowship with Institute Analyse Nonlineaire-CNRS, Univ. of Nice-Sophie Antipolis, France (2 years) followed by tenure track Assistant Prof. in the Department pf Mathematics, North Carolina State-Raleigh, NC ), "Existence, uniqueness and blow-up of solutions to wave equations with supercritical boundary interior sources and damping," University of Virginia, May 2008.
19. Turker Ozsari, (Postdoctoral Fellow at Institute Henri Poincare, Paris, France). "Stabilization of nonlinear Schrodinger equations" , University of Virginia, August 2010.
20. Yongjin Lu, ( Tenure track Assistant Professorship at Virginia State University (VSU)). "Asymptotic stability of Solutions to Coupled PDEs with Interface ", University of Virginia, December, 2011.
21. Jameson Graber, (Postdoctoral Fellow at INRIA, Paris ) , "The wave equation with generalized nonlinear acoustic boundary conditions", University of Virginia, August, 2012.
22. Justin Webster, (Postdoctoral Fellow , Mathematics Department, Oregon State University followed by Postdoc at NCState), "Analysis of Flow-Plate Interactions: Semigroup Well-Posedness and Long Tome Behavior", University of Virginia, August 2012.
23. Nicolas Fourier, ( Research Analyst at CGG (Companie Generale de Geophysique) , Paris, France, Data Scientist at Soul Machines, Auckland, Australia.), "Analysis of existence, regularity and stability of solutions to wave equations with dynamic boundary conditions" , University of Virginia, May 2013.
24. Christpher Lefler, (Research Analyst at Northrop Grumman Corporation, Washington, DC ), "Wellposedness and Stability of Nonlinear Schrodinger Equations with Dynamic/Wentzell Boundary Conditions". University of Virginia, May 2014.
25. Jason Knapp,: (Quantitaive Analyst, Software Co, Philadelphia). "Stability and Convergence of Approximate Solutions to the Moore-Gibson-Thomson Equation", University of Virginia, May 2014.
26. Rodrigo Monteiro (Postdoc at UFRJ (University Federal Rio de Janeiro, Brasil) "Long time dynamics of two classes of beam and plate equations.", University of Sao Paolo, Sao Paolo, Brasil, April 2016.
27. Arthur Caixeta, (Postdoc at Univ. of Maringa, Brasil and Assist. Professor University of Londrina, Brasil.) " Long time behavior for an equation of MGT type". University of Maringa, Brasil, May 2016.



28. Xiang Wan, (Postdoc Wayne State University) , "Global Well-Posedness and Exponential Stability for a Non-linear Thermoelastic Kirchhoff- Love Plate System", University of Virginia, July, 2017.
29. Buddhika Priyasad (ERC Postdoc University of Graz, Austria), "Uniform Stabilization of Navier Stokes Equations in  $l_q$  based Sobolev and Besov spaces,, University of Memphis, May, 2019.

## VII POSTDOCTORAL FELLOWS

1. Josef Korbicz (Poland, University of Wroclaw), 1991
2. Sung Kang Chang (Korea, Donsang University), 1996
3. Shuping Chen (China, Zhangdou University), 1988
4. Peng. F. Yao (China, Univ. of Beijing), 1996–1998
5. John Cagnol ( Univ de Nice, France), 1999–2000
6. Francesca. Bucci (Italy, Univ. of Firenze), 2001
7. Anastasia Ruzmaikina (Princeton Univ.), 1999–2002
8. Catherine Lebiedz, 2002–2003
9. John Cagnol (Univ. of Nice, France), 2001–2003
10. Il Hyo Jung (Pusan University, Korea), 2005–2006
11. Xangjin Xu (John Hopkins, Baltimore, MD ) , 2004-2007
12. Pelin Geredeli, HCTPE, Ankara, Turkey, 2011.
13. Turker Ozsari, Dogus University, Istanbul, Turkey, 2012.
14. Zhifei Zhang, Academia Sinica, Beijing 2013.
15. Xiaojun Wang, PennState University, 2014.
16. Michael Pokojovy, University Karlsruhe, 2012, 2013, 2016.

## VIII PUBLICATIONS

### VIII(a) Books. Research monographs

1. *Differential and Algebraic Riccati Equations with IR. Triggiani, Applications to Boundary/Point Control Problems: Continuous Theory and Approximation Theory* , Springer Verlag, Lecture Notes 164 (1991), 160 pp.
2. I. Lasiecka and R. Triggiani. : Control Theory for Partial Differential Equations: Continuous and Approximation Theories; Vol 1: Abstract Parabolic Systems (680 pp.) , *Encyclopedia of Mathematics and Its Applications Series*, Cambridge University Press, January 2000
3. Control Theory for Partial Differential Equations: Continuous and Approximation Theories; Vol 2: Abstract Hyperbolic-like Systems over a Finite Time Horizon (422 pp.) (with R. Triggiani), *Encyclopedia of Mathematics and Its Applications Series*, Cambridge University Press, January 2000.
4. *Stabilization and Controllability of Nonlinear Control Systems Governed by Partial Differential Equations* (with R. Triggiani), in preparation under contract from Springer Verlag. First draft of 500 pages available.
5. NSF-CBMS Lecture Notes: *Mathematical Control Theory of Coupled PDE's*, SIAM, Philadelphia, 242 pages, 2002.

6. *Functional Analytic Methods for Evolution Equations* (co-authored with G. Da Prato, A. Lunardi, L. Weis, R. Schnaubelt), Springer Verlag Lecture Notes in Mathematics, 254 pages, 2004.
7. Tangential Boundary Stabilization of Navier Stokes Equations (with V. Barbu and R. Triggiani), *Memoires of American Mathematical Society*, Vol. 181, pp. 1–125, 2006.
8. Long-Time Behavior of Second-Order Evolution Equations with Nonlinear Damping (with I. Chueshov), *Memoires of American Mathematical Society*, Vol. 195, AMS, 180 pages, 2008.
9. Von Karman Evolutions (with I. Chueshov), Monograph Series, *Springer Verlag*. 2010.
10. I. Chueshov and I. Lasiecka, Well-posedness and long time behavior in nonlinear dissipative hyperbolic-like evolutions with critical exponents. *Applied Mathematics, Vol. 6, HCDTE Lecture Notes. Part I. Nonlinear Hyperbolic PDEs, Dispersive and Transport Equations, AIMS*, 2013.
11. Mathematical Theory of Evolutionary Fluid-Flow Structure Interactions,[with B. Kaltenbacher, I. Kukawica, I. Lasiecka, R. Triggiani, A. Tuffaha, J. Webster], Oberwolfach Seminars, vol 48, 307 pages, *Birkhauser* 2018.

### VIII(b) Books edited

1. *Control Problems for Systems Described by Partial Differential Equations and Applications* (with R. Triggiani), Springer Verlag Lecture Notes 97, 1987.
2. *Modelling and Inverse Problems of Control for Distributed Parameter Systems* (with A. Kurzhanski), Springer Verlag Lecture Notes in Control and Information Sciences 154, 1991.
3. *Control Problems in Industry* (with B. Morton), Birkhäuser, Progress in Systems and Control Theory 21, 1995.
4. *Optimization Methods in PDE's* (with S. Cox), AMS, Contemporary Mathematics, 1997.
5. *System Modeling and Optimization* (with A. Dontchev, P. Kall, A. Olbrot, and M. Polis), Chapman and Hall, Research Notes in Mathematics Series, 1999.
6. *Control of Nonlinear Distributed Systems* (with G. Chen and J. Zhou), Marcel Dekker, Lecture Notes in Pure and Applied Mathematics, Vol. 218, 2001.
7. Optimal Control of Complex Structures (with K-H. Hoffman, G. Leugering, J. Sprekels, F. Troltzsch), Birkhäuser, Vol. 139, 2002.
8. Analysis and Optimization of Differential Systems (with V. Barbu, D. Tiba and C. Varasan), Kluwer AP, 2003.
9. Geometric Methods in Inverse Problems and Control Theory, (with C. Cooke, G. Uhlmann and M. Vogelious), Springer Verlag, 2003.
10. Special Issue of Control and Cybernetics (with Jan Sokolowski), dedicated to Prof. K. Malanowski, Vol. 32, No. 3, 2003.
11. Control Methods in PDE-Dynamical Systems (with F. Ancona, W. Littman and R. Triggiani), AMS-SIAM Joint Summer Research Conference, *Contemporary Mathematics, AMS*, vol. 426. 2007
12. Control Theory of PDE's, guest editor (with L. Pandolfi) for the Special Issue of the journal *Applied Mathematics and Optimization*, Springer Verlag, Vol. 55, No. 2, 2007.
13. Special two volumes for *Applicationae Mathematicae*, Vol. 35(3) and 35(4), 2008. Journal of Polish Academy of Sciences, Institute of Mathematics, funded in 1953 by H. Steinhaus.
14. Invited Special Issue “Qualitative Behavior of Nonlinear Evolutionary PDE's,” *Discrete and Continuous Dynamical Systems* (co-edited with M. Nakao and G. Todorova), Vol 2, Number 3, 2009 .

15. *Advances in Dynamics and Control: Theory Methods and Applications* (co-edited with S. Sivasundaram, J. Vasandhara, F. Udwardia), Special volume in honor of A. V. Balakrishnan, *Cambridge Scientific Publishers*, 2011.
16. *Progress in Analysis and Its Applications*. Proceedings of the 7-th ISAAC Congress. Chapter: Control and Optimization of Nonlinear Evolutionary Systems (with F. Bucci), ISAACS, 2011
17. Special Issue In Memory of A.V. Balakrishnan. Coedited with: A. Bensoussan, I. Kukavica, S. Mitter, R. Triggiani *Applied Mathematics and Optimization*, vol 73 (2016), no. 3,
18. Special Issue on Control, Optimization and PDE dedicated to Professor Viorel Barbu on the occasion of his 75th birthday. Coedited with Boris Mordukhovich, Simeon Reich and Alexander J. Zaslavski, *PAFA* 2018.
19. A Tribute to Igor D. Chueshov (1951-2016). Coedited with L. Arnold, T. Caraballo and M. Scheutzov. *Discrete and Continuous Dynamical Systems Series B, AIMS*, vol 23. 2018.

#### VIII(c) Invited review papers

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2. Algebraic Riccati equations arising in boundary/point control: A review of theoretical and numerical results, Part I: continuous theory, Part II: Approximation theory (with R. Triggiani), *Perspectives in Control Theory*, Birkhäuser, pp. 175–235 (1990).
3. Recent advances in regularity of second-order hyperbolic mixed problems and applications (with R. Triggiani) for the series, *Dynamics Reported*, Springer Verlag, Vol. 3, pp. 104–162 (1994).
4. Riccati equations arising from boundary and point control problems, invited review paper for INRIA, *Conference Analysis and Optimization of Systems, LNCIS*, Springer Verlag, Vol. 185, pp. 23–46 (1993).
5. Control of systems governed by PDE's—A historical perspective, *34-th IEEE-CDC Conference*, p. 2792 (1995).
6. The case of differential geometry in the control of single and coupled PDE's, the structural acoustic chamber (with R. Gulliver, W. Littman and R. Triggiani), *The IMA Volumes in Mathematics and its Applications*, Springer Verlag, Vol. 137, pp. 73–183 (2003).

#### VIII(d) Refereed journal articles

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2. Finite difference approximation of optimal control for systems described by nonlinear differential equations with delay, *Control and Cybernetics*, Vol. 5, No. 1, pp. 35–67 (1976).
3. On regularity of solutions to convex optimal control problems with control constraints for parabolic systems (with K. Malanowski), *Control and Cybernetics*, Vol. 6, No. 3–4, pp. 57–74 (1977).
4. Generalizations of Dubovitsky-Mulutyn conditions, *Journal of Optimization Theory and Applications*, Vol. 24, No. 3, pp. 421–436 (1978).
5. On discrete-time Ritz-Galerkin approximation of optimal control problems with control constraints for parabolic systems (with K. Malanowski), *Control and Cybernetics*, Vol. 7, No. 1, pp. 20–37 (1978).
6. Boundary control problems: Regularity of optimal solutions, *Applied Mathematics and Optimization*, Vol. 4, pp. 301–327 (1978).
7. State constrained control problems for parabolic systems: Regularity of optimal solutions, *Applied Mathematics and Optimization*, Vol. 6, pp. 1–29 (1980).

8. Boundary control for parabolic systems: Finite element approximation, *Applied Mathematics and Optimization*, Vol. 6, pp. 31–62 (1980).
9. A unified theory for abstract parabolic boundary problems: A semi-group approach, *Applied Mathematics and Optimization*, Vol. 6, pp. 287–333 (1980).
10. A cosine operator approach to modelling  $L_2(0, T; L_2(\Omega))$  boundary input hyperbolic equations (with R. Triggiani), *Applied Mathematics and Optimization*, Vol. 7, pp. 35–83 (1981).
11. Hyperbolic equations with Dirichlet boundary feedback via position vector: Regularity and almost periodic stabilization, Part I (with R. Triggiani), *Applied Mathematics and Optimization*, Vol. 8, pp. 1–37 (1981).
12. Hyperbolic equations with Dirichlet boundary feedback via position vector: Regularity and almost periodic stabilization, Part II (with R. Triggiani), *Applied Mathematics and Optimization*, Vol. 8, pp. 103–130 (1982).
13. Hyperbolic equations with Dirichlet boundary feedback via position vector: Regularity and almost periodic stabilization, Part III (with R. Triggiani), *Applied Mathematics and Optimization*, Vol. 8, pp. 199–221 (1982).
14. Structural assignment of Neumann boundary feedback parabolic equations (with R. Triggiani), *Annali Mat. Pura e Appl. (IV)*, Vol. XXXII, pp. 131–175 (1982).
15. Stabilization and structural assignment of Dirichlet boundary feedback parabolic equations (with R. Triggiani), *SIAM Journal on Control*, Vol. 21, No. 5, pp. 766–803 (1983).
16. Feedback semigroups and cosine operators for boundary feedback parabolic and hyperbolic equations (with R. Triggiani), *Journal Diff. Equations*, Vol. 47, No. 2, pp. 246–272 (1983).
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18. Dirichlet boundary control problem for parabolic equations with quadratic cost: Analyticity and Riccati feedback synthesis (with R. Triggiani), *SIAM Journal on Control and Optimization*, Vol. 21, No. 1, pp. 41–67 (1983).
19. Regularity of hyperbolic equations under  $L_2(O, T; L_2(\Omega))$  Dirichlet boundary terms (with R. Triggiani), *Applied Mathematics and Optimization*, Vol. 10, pp. 275–286 (1983).
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21. Ritz-Galerkin approximation of time-optimal boundary control, *SIAM Journal on Control and Optimization*, Vol. 22, No. 3, pp. 477–499 (1984).
22. Nondissipative boundary stabilization of hyperbolic equations with boundary observation (with R. Triggiani), *Journal de Mathematique Pure et Applique*, Vol. 63, pp. 59–80 (1984).
23. Perturbations of the spectrum and their applications to stabilization of vibrating strings (with J. P. McKenna), *SIAM Journal of Mathematical Analysis*, Vol. 15, No. 6 (1984).
24. Convergence estimates for semidiscrete approximations of non-selfadjoint parabolic equations, *SIAM Journal on Numerical Analysis*, Vol. 21, No. 5, pp. 894–908 (1984).
25. Finite dimensional boundary feedback control problems for linear infinite dimensional systems (with W. Schempp and W. Desch), *Israel Journal of Mathematics*, Vol. 51, No. 3, pp. 177–207 (1985).
26. Finite rank, relatively bounded perturbations of  $C_0$ -semigroups, Part I: Well posedness and boundary feedback hyperbolic dynamics (with R. Triggiani), *Annali Scuola Normale Superiore di Pisa*, Vol. XII, No. 4 (1985).
27. Approximations of Riccati equations for abstract boundary control problems: Applications to hyperbolic systems, *Numerical Functional Analysis and Optimization*, Vol. 8, No. 3–4, pp. 207–243 (1985).

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29. Riccati equations for nonsymmetric and nondissipative hyperbolic systems (with S. Chang), *Journal of Mathematical Analysis and Applications*, Vol. 116, No. 2, pp. 378–414 (1986).
30. Finite rank, relatively bounded perturbations of  $C_0$ -semigroups, Part II: Spectrum allocation and Riesz basis in parabolic and hyperbolic feedback systems (with R. Triggiani), *Ann. Matem. Pura and Applic. IV*, Vol. CXLIII, pp. 47–100 (1986).
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32. Galerkin approximations of abstract parabolic boundary value problems with ‘rough’ boundary data:  $L_p$  theory, *Mathematics of Computations*, Vol. 47, No. 175, pp. 55–75 (July 1986).
33. A direct study of Riccati equations arising in hyperbolic boundary control problems (with G. DaPrato and R. Triggiani), *Journal of Differential Equations*, Vol. 64, No. 1, pp. 26–47 (1986).
34. Regulator problems for parabolic equations with Dirichlet boundary control; Riccati’s feedback synthesis, regularity, Galerkin approximations, Part I (with R. Triggiani), *Journal of Applied Mathematics and Optimization*, Vol. 16, pp. 147–168 (1987).
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38. A lifting theorem for the time regularity of solutions to abstract equations with unbounded operators and applications to hyperbolic equations (with R. Triggiani), *Proceedings of AMS*, Vol. 104, No. 3, pp. 745–755 (1988).
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43. Trace regularity results for wave equation with homogenous Neumann boundary conditions and compactly supported data (with R. Triggiani), *Journal of Mathematical Analysis and Applications*, Vol. 141, No. 1, pp. 49–71 (1989).
44. Algebraic Riccati Equations with Non-Smooth Observations Arising in Hyperbolic and Petrovsky Type Equations (with F. Flandoli and R. Triggiani), *Annali di Matematica Pura et Applicata*, (IV) Vol. CLIII, pp. 307–382 (1989).

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50. Sharp regularity results for second order hyperbolic equations of Neumann type (with R. Triggiani), *Annali di Matematica Pura et Applicata*, (IV) Vol. CLVII, pp. 285–367 (1990).
51. The wave equation with nonlinear boundary conditions (with A. Stahel), *Nonlinear Analysis, Theory and Applications*, Vol. 15, No. 1, pp. 39–58 (1990).
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287. Stabilization to an equilibrium of the Navier-Stokes equations with tangential action of feedback controllers. (with R. Triggiani), *Nonlinear Anal.* 121 (2015), 4241–446.
288. Moore-Gibson-Thompson equation with memory, part II. General decay of energy. (with Xiaojun Wang). , *Journal of Differential Equations*, 259, pp 7610-7635, 2015.
289. Wellposedness and uniform stability for nonlinear Shrodinger equations with dynamic/Wentzell boundary conditions. With M. Cavalcanti, W. Correa and C. Leffler. *Indiana University Mathematics Journal*, vol 65, Nr 5, 2016.
290. Domain of Fractional Powers of Matrix-valued Operators: A general Approach, (with R. Triggiani), *Operator Semigroups Meet Complex Analysis, Harmonic Analysis and Mathematical Physics*, Birkhauser, vol 250, pop 297-311, (2015). Invited paper for a volume dedicated to C.Batty.
291. Von Karman plate in a gas flow: recent results and conjectures. With I. Chueshov, E. Dowell and J.Webster. *Applied Mathematics and Optimization.* vol 73, 475-500, (2016).
292. Heat-Wave interaction in 2-3 dimensions: optimal rational decay rate (with G. Avalos and R. Triggiani). *Journal Mathematical Analysis and Applications*- vol 437, pp 782-815,( 2016).
293. Moore-Gibson-Thompson equation with memory, part I: exponential decay of energy (with Xiaojun Wang). *ZAMP* -67, nr 2, 67-17, 23pp, (2016)
294. Heat-structure interaction with viscoelastic damping: analyticity with sharp analytic sector, exponential decay, fractional powers. (with R. Triggiani), *Communications on Pure and Applied Analysis*. Vol 15, Nr 5, pp 1515-1543, (2016).
295. Global attractors for a third order in time nonlinear dynamics. With A. Caixeta and V. Domingos Cavalcanti. *Journal Differential Equations*. 261, pp 113-147,( 2016)
296. Mathematical Aeroelasticity: A survey. With I. Chueshov. E. Dowell and J. Webster. , *MESA*, vol 7, nr 1, pp 5-29, 2016.
297. Intrinsic decay rates for the energy of a nonlinear viscoelastic equation modeling the vibrations of thin rods with variable density, with M. Cavalcanti, V. Domingos Cavalcanti - ANA (Advances in Nonlinear Analysis) ., 6(2) 121-145, 2017.
298. Feedback stabilization of a fluttering panel in an inviscid subsonic potential flow. With J. Webster, *Siam Journal Mathematical Analysis* , Vol 48, Nr 5, pp 1848-1891, 2016.
299. The Moore-Gibson-Thompson equation with memory in critical case, With F. Dell’Oro and V. Pata . *Journal Differential Equations*, 261, nr 7, 4188-4222,2016. 2016.
300. Global solvability of Moore-Gibson-Thompson equation with memory arising in nonlinear acoustics, to appear special Volume dedicated to J. Pruss *Journal Evolution Equations*. 17, (2017), 411-441.
301. On long time behavior of Moore-Gibson-Thompson equation with molecular relaxation”. with A. Caixeta and V. Domingos Cavalcanti . *Evolution Equations and Control Theory* , vol 5, Nr 4, pp 661-676, 2016.
302. Quasi-stability and Exponential Attractors for A Non-Gradient System—Applications to Piston-Theoretic Plates with Internal Damping”. with S. Howell and J. Webster. *Evolution Equations and Control Theory*. vol 5, Nr 4, pp 567-603, 2016.

303. "Small data global existence for a fluid-structure model" by Ignatova, Mihaela; Kukavica, Igor; Lasiecka, Irena; Tuffaha, Amjad - *Nonlinearity* vol 30, nr 2, 848-898, 2017.
304. The stochastic linear quadratic control problem with singular estimates [with H. Cavit, T. Levajkovic, A. Tuffaha], *SIAM J. Control Optim.* 55 (2017), no. 2, 595â-626.
305. Global solvability of Moore-Gibson-Thompson equation with memory arising in nonlinear acoustics. *J. Evol. Equ.* 17 (2017), no. 1, 411â-441.
306. Intrinsic decay rates for the energy of a nonlinear viscoelastic equation modeling the vibrations of thin rods with variable density. [with M. Cavalcanti, V. Domingos, C. Webler], *Adv. Nonlinear Anal.* 6 (2017), no. 2, 121-145.
307. Global existence and exponential stability for a nonlinear thermoelastic Kirchhoff - Love plate ,with M. Pokojovy, X. Wan . *Nonlinear Anal. Real World Appl.* 38 (2017), 184-221
308. Flow-plate interactions:wellposedness and long time behavior (with J. Webster), *Oberwolfach Seminars*, vol 48, pp 173-259, Birkhauser, Springer Nature, (2018).
309. Long time dynamics of vectorial von Karman system with nonlinear thermal effects and free boundary conditions, [with To Fu Ma and R Monteiro] ,*Discrete and Continuous Dynamical Systems, series B.* vol 23, Nr 3, pp. 1037-1072, (2018).
310. Boundary control of small solutions to fluid-structure interactions arising in coupling of elasticity with Navier Stokes equation under mixed boundary conditions. [with K.Szulc and A. Zochowski].*Nonlinear Analysis, Real World Applications*, vol 44, pp 54-85, (2018)
311. Feedback control of the acoustic pressure in ultrasonic propagation, [with F. Buccì], *Optimization*, to appear 2019.
312. Global smooth attractors for dynamics of thermal shallow shells without vertical dissipation", [with R. Monteiro and Ma To Fu] *Transactions of AMS*, vol 371, nr 11, pp 8051-8096, (2019)
313. Long time behavior of quasilinear thermoelastic Kirchhoff Love plates , [with M. Pokojovy and X. Wan] *Nonlinear Analysis*, to appear 2019.
314. Reducing Drag of the obstacle in the channel by boundary control:theory and numerics. [with K. Szulc and A. Zochowski]. to appear 3rd IFAC Workshop on Control of Systems Governed by Partial Differential Equation, XI Workshop Control of Distributed Parameter Systems, Joint CPDE CDPS 2019

### VIII(e) Refereed proceedings papers

1. Sur l'approximation du controle optimale des systems gouvernes par des equations differentielles avec retard par la methods des difference finies, *Proceedings of VII IFIP Conference on Optimization Techniques*, Nice, Lecture Notes, Springer Verlag (1975).
2. Necessary conditions of optimality for optimal control of systems with delay, *Archiwum AiT*, No. 4 (1973).
3. Estimations of the rate of convergence of approximations to constrained control problems for parabolic systems (with K. Malanowski), *Proceedings of the International Conference on Methods of Mathematical Programming*, Zakopane, Poland (1977).
4. Approximation of optimal solutions to state and control constrained optimal control problems for systems described by nonlinear differential equations with delay, *Proceedings of IFAC Conference on Infinite Dimensional Systems*, Control Theory Centre, University of Warwick, United Kingdom (1977).
5. The quadratic cost problem for boundary input hyperbolic equations:  $L_2$  theory, *Control Theory for Distributed Parameter Systems and Applications*, Lecture Notes in Control, Springer Verlag, New York, Vol. 54, pp. 138-153 (1983).

6. Approximations of analytic and differentiable semigroups: Rate of convergence with nonsmooth initial conditions in infinite dimensional systems, *Proceedings of the Conference on Operator Semigroups and Applications*, Lecture Notes in Mathematics, Springer Verlag, Vol. 1076, pp. 123–139 (1984).
7. Approximations of Riccati equations corresponding to hyperbolic boundary control problems, *Distributed Parameter Systems, Lecture Notes in Control and Information Sciences*, Springer Verlag, Vol. 75, pp. 228–245 (1985).
8. Sharp regularity results for mixed hyperbolic problems of second order, *Lecture Notes in Mathematics*, Differential Equations in Banach Spaces, Springer Verlag, Vol. 1223, pp. 160–176 (1986).
9. Strong stabilization of a nonlinear wave equation with dissipation on the boundary and related problems, invited paper, *Recent Advances in Communication and Control Theory* (R. E. Kalman, et al., eds.), Optimization Software, Inc., Publication Division, New York, pp. 194–213 (1987).
10. Finite element approximations of wave equation with Dirichlet boundary data defined on a bounded domain in  $R^2$  (with P. Neittaanmaki and J. Sokolowski), *Lecture Notes in Control and Information Sciences*, Vol. 102, Distributed Parameter Systems (F. Kappel, et al., eds.), Springer Verlag, pp. 216–234 (1987).
11. Exponential local stability of first order strictly hyperbolic systems with nonlinear perturbations on the boundary, *Lecture Notes in Control and Information Sciences*, Vol. 100, Boundary Control and Boundary Variations (J. P. Zolesio, ed.), Springer Verlag, pp. 212–235 (1988).
12. Stability of wave equation with nonlinear damping in the Dirichlet and Neumann boundary conditions in control of partial differential equations (A. Bermudez, ed.), *Lecture Notes in Control and Information Sciences*, Springer Verlag, pp. 47–65 (1989).
13. Further results on exact controllability of the Euler-Bernoulli equation with controls in the Dirichlet and Neumann boundary conditions (with R. Triggiani), *Lecture Notes in Control and Information Sciences*, Springer Verlag, Vol. 147, pp. 226–235 (1990).
14. Asymptotic behavior of the solutions of the Kirchhoff plate with nonlinear dissipation in the bending moments and shear forces, *Lecture Notes in Control and Information Sciences*, Springer Verlag, Control of Boundaries (J. Simon, ed.), Vol. 125, pp. 168–176.
15. Controllability of a viscoelastic Kirchhoff plate, *International Series of Numerical Mathematics*, Birkhäuser, Vol. 91, pp. 237–248 (1989).
16. Exact controllability of a plate equation with one control acting as a bending moment, *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker, Vol. 127, pp. 345–363 (1990).
17. Uniform exponential energy decay of wave equations in a bounded region—without any geometric conditions (with R. Triggiani), *Lecture Notes in Control Sciences*, Springer Verlag, Vol. 147 (1990).
18. Finite dimensional approximations of Algebraic Riccati Equations arising in hyperbolic problems with boundary/point control, *Proceedings of NASA-UCLA Workshop on Computational Techniques in Identification and Control of Flexible Flight Structures*, Optimiz. Software, Inc., pp. 247–270 (1990).
19. Exponential stabilization of hyperbolic systems with nonlinear, unbounded perturbation—Riccati operator approach, *Springer Verlag Lecture Notes*, Vol. 154, pp. 102–116 (1991).
20. The Euler Bernoulli plate is exactly controllable via bending moments only (with M. A. Horn), *Lectures in Control and Information Sciences*, Springer Verlag, Vol. 149, pp. 129–143 (1991).
21. Algebraic Riccati Equations arising from systems with unbounded input–solution operator: Applications to boundary control problems for wave and plate equations (with R. Triggiani), *Lecture Notes in Control and Information Sciences*, Springer Verlag, Vol. 180 pp. 530–538 (1992).
22. Galerkin approximations of infinite-dimensional compensators for flexible structures with unbounded control actions, *Springer Verlag Lecture Notes LNCIS*, Vol. 178, pp. 253–272 (1992).

23. Uniform boundary stabilization of semilinear wave equation with nonlinear boundary damping (with D. Tataru), *LNPA, Theory of Control* (M. Joshi, A. V. Balakrishnan, eds.), Marcel Dekker, Vol. 142, pp. 233–254 (1992).
24. Global decay rates for the solutions to a von Karman plate without geometric conditions (with M. Bradley), *LNPA*, Marcel Dekker, Vol. 155, pp. 25–39 (1993).
25. Sharp trace estimates of solutions to Kirchhoff and Euler-Bernoulli equations (with R. Triggiani), *LNPA*, Marcel Dekker, Vol. 148, pp. 141–181 (1993).
26. Uniform convergence of the solutions to Riccati equations arising in boundary/point control problems, *Stochastic Theory and Adaptive Control, LNCIS*, Springer Verlag, pp. 285–306 (1992).
27. Second-order abstract differential equations with nonlinear boundary conditions—Applications to von Karman system with boundary damping (with A. Favini), *LNPAM*, Marcel Dekker, Vol. 148, pp. 65–85 (1993).
28. Asymptotic behavior and finite dimensional attractors for solutions to a semilinear wave equation with a nonlinear damping, *Mathematical and Numerical Aspects of Wave Propagation, SIAM*, pp. 321–330 (1993).
29. Some aspects of the adaptive boundary control of stochastic linear hyperbolic systems (with T. E. Duncan, B. Pasik), *Proceedings of 32nd IEEE Conference on Decision and Control*, San Antonio, Dec. 15–17 (1993).
30. Asymptotic behavior and attractors of nonlinear von Karman plate equations with boundary dissipation, *Proceedings of IMA Volumes in Mathematics and its Applications*, Springer Verlag, Vol. 70, pp. 171–195 (1995).
31. Global stabilization of a von Karman plate (with M. E. Bradley), *Identification and Control in Systems Governed by PDE's* (H. T. Banks, R. H. Fabiano, K. Ito, eds.), *SIAM*, pp. 101–116 (1993).
32. Wellposedness and uniform decay rates for weak solutions to a von Karman system with nonlinear dissipative boundary conditions (with M. A. Horn, D. Tataru), *Optimal Control of Differential Equations, LNPAM*, Marcel Dekker, Vol. 160, pp. 133–159 (1994).
33. Asymptotic behavior and the existence of finite dimensional attractors for von Karman plate equations with Boundary Damping, *Boundary Control and Variations, LNPAM*, Marcel Dekker, Ch. 14, pp. 273–295 (1994).
34. Numerical approximations of solutions to Riccati equations arising in boundary control problems for the wave equation (with E. Hendrickson), *Optimal Control of Differential Equations, LNPAM*, Marcel Dekker, Vol. 160, pp. 111–133 (1994).
35. Global existence and uniqueness of regular solutions to the dynamic von Karman system with nonlinear boundary dissipation (with M. A. Horn), *Proceedings of IFIP Conference on Control of Partial Differential Equations*, Marcel Dekker, Vol. 165, pp. 99–121 (1994).
36. Further regularity properties in quadratic cost problems for parabolic equations (with R. Triggiani), *Optimal Control of Differential Equations, LNPAM*, Marcel Dekker, Vol. 160, pp. 173–193 (1994).
37. Wellposedness of the second-order nonlinear abstract differential equations with multivalued boundary conditions, *Proceedings at the First World Congress of Nonlinear Analysis*, Walter de Gruyter, Berlin, pp. 2347–2370 (1996).
38. Uniform stabilizability of nonlinearly coupled Kirchhoff plate equations (with M. A. Horn), *International Series of Numerical Mathematics*, Birkhäuser, Vol. 118, pp. 189–210 (1994).
39. Maximal decay rates and asymptotic behavior of solutions in nonlinear elastic structures (with W. Heyman), *Optimal Design and Control*, Birkhäuser, Vol. 19, pp. 229–241 (1995).
40. Stability of dynamics arising in structural acoustic problems, *Proceedings of MMAR 96 Conference*, Vol. 1, pp. 117–127 (1996).
41. Uniform stabilization of a shallow spherical shell (with R. Triggiani, V. Valente), *Control of Partial Differential Equations*, Marcel Dekker, Vol. 174, pp. 171–181 (1995).

42. A singular control approach to highly damped second-order abstract equations and applications (with L. Pandolfi, R. Triggiani), *Control of Partial Differential Equations*, Marcel Dekker, Vol. 174, pp. 157–171 (1995).
43. Boundary and point feedback control of models arising in smart structures (with G. Avalos), *Proceedings of 1995 SPIE North American Conference on Smart Structures and Materials*, p. 2442 (1995).
44. Boundary control problems for a dynamic Kirchhoff plate model with partial observations (with E. Hendrickson), *Modelling and Optimization of Distributed Parameter Systems*, Chapman and Hall, pp. 241–254 (1996).
45. Convergence of numerical algorithms in feedback control optimization for smart materials and structures (with G. Avalos and E. Hendrickson), *Proceedings of SPIE's 1996 Symposium on Smart Structures and Materials*, pp. 2715–2717 (1996).
46. Convergence rates for semidiscrete FEM approximations of dynamic nonlinear shallow shells (with R. Marchand), *Computational Science in 21 Century* (M. O. Bristeau, G. Etgen, W. Fitzgibbon, J. L. Lions, J. Periaux, and M. Wheeler, eds.), invited paper honoring R. Glowinski, John Wiley, pp. 558–567 (1997).
47. Control and stabilization of interactive structures, *Systems and Control in the Twenty-First Century*, Birkhäuser, pp. 245–263 (1997).
48. Carleman estimates and exact boundary controllability for a system of coupled, nonconservative second-order hyperbolic equations (with R. Triggiani), *Partial Differential Equations Methods in Control Lecture Notes in Pure and Applied Analysis*, Marcel Dekker, Vol. 188, pp. 215–245 (1997).
49. Control and stabilization in nonlinear structural acoustic problems (with R. Marchand), *Mathematics and Control in Smart Structures, SPIE's*, Vol. 3039, pp. 192–202 (1997).
50. Nonlinear control problems and their approximations for thin shallow shells (with R. Marchand), *Proceedings of the International Conference on Nonlinear Problems in Aviation and Aerospace, ICNPAA*, Daytona Beach, FL, May 1996, pp. 397–405 (1997).
51. Von Karman system with nonlinear boundary dissipation, *Proceedings of the 4-th International Symposium MMAR*, pp. 63–71 (1997).
52. Uniform decays in nonlinear thermoelastic system (with G. Avalos), *Optimal Control: Theory, Algorithms and Applications* Kluwer Academic Publishers, Vol. 15, pp. 1–22 (1998).
53. Energy decay for semilinear plates with nonlinear boundary dissipation acting via moments only (with G. Ji), *Optimal Control: Theory, Algorithms and Applications*, Kluwer Academic Publishers, Vol. 15, pp. 224–246 (1998).
54. Feedback noise control in an acoustic chamber, Mathematical theory, invited review paper with R. Triggiani, *Nonlinear Problems in Aviation and Aerospace, Stability and Control Theory*, Gordon and Breach Science Publishers, Vol. 11, pp. 89–113 (2000).
55. Active noise control in an acoustic chamber: mathematical theory, invited paper based on plenary lecture, *Proceedings of the 5-th International Symposium MMAR*, pp. 13–23 (1998).
56. Exact boundary controllability of a first order, nonlinear hyperbolic equation with non-local integral terms arising in epidemic modeling (with R. Triggiani), *Direct and Inverse Problems in Mathematical Physics*, Kluwer Academic Publishers, ISAAC series, Vol. 5, pp. 363–399 (2000).
57. Uniform stabilization of von Karman system with nonlinear boundary feedback, invited SIAM paper, *37-th CDC IEEE Proceedings*, Vol. 3, pp. 3479–3483 (1998).
58. Exact-approximate controllability of thermoelastic systems with free boundary conditions (with G. Avalos), *Control of Distributed Parameter Systems*, Kluwer Academic Press, pp. 3–13 (1999).
59. An observability estimate in  $L_2 \times H^{-1}$  for second order hyperbolic equations with variable coefficients (with R. Triggiani and P. Yao), *Control of Distributed Parameter Systems*, Kluwer Academic Press, pp. 71–79 (1999).

60. Uniform stability of nonlinear thermoelastic plates with free boundary conditions (with G. Avalos and R. Triggiani), *Proceedings of the Conference on Control of PDE's*, Chemnitz 1998, Birkhäuser, *Int. Series of Num. Analysis*, Birkhäuser, Vol. 135, pp. 1–32 (1999).
61. Finite dimensional observers and compensators for thermoelastic systems with boundary controls and point observations (invited paper with S. K. Chang and R. Triggiani), *38-th IEEE CDC Proceedings*, Vol. 4 (1999).
62. Exact boundary controllability of thermoelastic plates with variable coefficients (with M. Eller and R. Triggiani), *Semigroups of Operators: Theory and Applications, Progress in Nonlinear Differential Equations*, Birkhäuser, Vol. 42, pp. 335–352 (2000).
63. Simultaneous exact/approximate boundary controllability of thermo-elastic plates with variable transmission coefficient (with M. Eller and R. Triggiani), *Shape Optimization and Optimal Design, LNPAM*, Marcel Dekker, Vol. 216, pp. 109–231 (2001).
64. Nonlinear boundary feedback stabilization of dynamic elasticity with thermal effects, *Shape Optimization and Optimal Design, LNPAM*, Marcel Dekker, Vol. 216, pp. 353–355 (2001).
65. Optimal control and Algebraic Riccati Equations under singular estimates for the semigroup in the absence of analyticity (with R. Triggiani), *Differential Equations and Control Theory, LNPAM*, Marcel Dekker, Vol. 225, pp. 193–219 (2001).
66. Riccati equations for thermoelastic plates with boundary controls (with F. Bucci), *Proceedings of DCDIS Conference*, Guelph, Canada, May 15–18 (2003).
67. Regularity of transfer function and uniform stability of boundary control systems (with R. Triggiani), invited paper for *Proceedings of MMAR Conference on Control* (2003).
68. Nonlinear wave equations with degenerate damping (with V. Barbu and M. Rammaha), *Lect. Notes Pure Appl. Math.*, Chapman and Hall/CRC, Vol. 240, pp. 53–62 (2007).
69. Differential Riccati equations for the Bolza problem associated with unbounded control and singular estimate control system: Applications to boundary control of thermoelastic plates (with A. Tuffaha), *Proceedings of MMAR-11-th IEEE Conference Methods and Models in Automation and Robotics*, pp. 71–76 (2005).
70. Boundary control model of a nonlinear system of fluid structure interaction, (with V. Barbu, Z. Grujic, and A. Tuffaha), *IEEE-MMAR 2006 Proceedings*, pp. 91–95 (2006).
71. Local exponential stabilization strategies of the Navier Stokes Equations, via feedback stabilization of its linearization (with V. Barbu and R. Triggiani), *Proceedings of Oberwolfach Conference*, Birkhäuser-Verlag (2007), to appear.
72. Wellposedness and blow-up of solutions to wave equations with supercritical boundary sources and boundary damping (with L. Bociu), *Proceedings of the Conference on Differential and Difference Equations and Applications*, Hindawi Publ. Company, Melbourne, pp. 635–643 (2005).
73. Energy decay rates for the semilinear wave equation with nonlinear localized damping and source terms: An intrinsic approach (with D. Toundykov), Chapter 13 in *Free and Moving Boundaries: Analysis, Simulation and Control* (Roland Glowinski and Jean Paul Zolesio, eds.), Taylor and Francis, Vol. 252 (2006).
74. Differential Riccati equations for the Bolza problem associated with point boundary control of singular estimate control systems: Applications to boundary control of structural acoustic systems (with A. Tuffaha), Chapter 12 in *Free and Moving Boundaries: Analysis, Simulation and Control* (R. Glowinski and J. Paul Zolesio, eds.), CRC Taylor and Francis, Vol. 252 (2006).
75. Singular estimates and Riccati theory for fluid structure interaction models with boundary control (with A. Tuffaha), *MMAR-IEEE Proceedings* (September 2007).
76. Boundary feedback control in fluid-structure interactions (with A. Tuffaha), *47 IEEE Conferennce Proceedings on Decision and Control*, Cancun, Mexico (December 9–11, 2008).



77. Long-time dynamics of von Karman evolutions with thermal effects (with I. Chueshov), *Boletim da Sociedade Paranaense de Matematica*, Vol. 25, pp. 37-55 (2007). (Proceedings of the PDE Workshop, Maringa, Brazil, September 2007.)
78. Optimal Control theory for 3-dimensional fluid-structure interactions (with A. Tuffaha), *Proceedings of MTNS (Mathematical Theory of Systems and Networks)*, Fez, Morocco (May 2009).
79. Fluid-Structure Interaction Model: Wellposedness, Regularity and Control (with Viorel Barbu, Zoran Grujić, and Amjad Tuffaha.) In: *Advances in Dynamics and Control: Theory Methods and Applications*. Chapter 2, pp21-32. Cambridge Scientific Publishers, 2010.
80. Boundary Asymptotic Stabilizability of a Nonlinear Fluid Structure Interaction (with Y. Lu) , *Proceedings 49th IEEE Conference on Decision and Control*, pp 7057-7062, 2010
81. Long time dynamics and control of subsonic flow-structure interaction. *Proceedings of American Control Conference (ACC)* , Montreal, CA, June 27-29, 2012.
82. Controlling flutter in nonlinear panels in subsonic flows via structural velocity feedback. (with J. Webster) *Proceedings CDC- IEEE* , December, Los Angeles, 2014.

## IX PROFESSIONAL ACTIVITIES

### IX(a) Editorships

#### Editor in Chief

- *Applied Mathematics and Optimization* [AMO] , Publisher Springer Verlag, EIC with Paul Dupuis and Roger Temam, - 2013-2015 and with Huyen Pham and Roger Temam-2015- present.  
2016 Impact Factor: 1.236  
<http://www.springer.com/mathematics/journal/245>
- *Evolution Equations and Control Theory*, [EECT] , Publisher Aims, EIC with Alain Haraux, 2012 -present.  
2016 Impact Factor: 0.826  
<https://aims sciences.org/journals/home.jsp?journalID=25>

#### Editorial Boards

1. *SIAM Journal on Control and Optimization*, 1982–1994
2. *Applied Mathematics and Optimization*, Springer Verlag, 1984-2013. *Editor in Chief -EIC* [with P. Dupuis and R. Temam] - 2013
3. *International Journal of Mathematics and Mathematical Sciences*, (Hindawi) since 1985
4. *Computational Optimization and Applications* (Springer), since 1991
5. *Archives of Control Sciences* (DeGruyter) , since 1992
6. *Applied Mathematics and Computer Science*, 1992 -2009
7. *Discrete and Continuous Dynamic Systems*, AIMS, since 1994
8. *Dynamics of Continuous, Discrete and Impulsive Systems*, Univ. of Waterloo, since 1994
9. *Abstract and Applied Analysis*, Hindawi, since 1995
10. *Transactions on Automatic Control, IEEE*, Associate Editor, 1993-2001, and Editor at Large, 2001–2010
11. *Journal Mathematical Analysis and Applications*, Elsevier, 1998–2008

12. *Systems and Control Letters*, Elsevier, 1998 -2011
13. *Automatica*, Elsevier, 2000-2005
14. *Nonlinear Analysis*, Elsevier, since 2001
15. *Applicable Analysis*, Taylor and Francis, since 2002
16. *Nonlinear Studies*, IFNA, 2002-2008.
17. *Control and Cybernetics*, Polish Academy of Sciences, since 2005
18. *International Journal of Comput. Sciences and Mathematics*, 2006 -2010
19. *The Open Applied Mathematics Journal*, De Gruyter, since 2007
20. *Set Valued and Variational Analysis*, Springer Verlag, 2008 -2013
21. *Applicationae Mathematicae*, Funded by H. Steinhaus, Polish Academy of Sciences, since 2008.
22. *Communications in Mathematical Analysis*, Math-Res.-Publishers, *Coordinating Area Editor*, 2010-2014
23. *Journal Of Optimization Theory and Applications (JOTA)* , Springer Verlag, since 2012.
24. *Central European Journal of Mathematics*, On the Advisory Board , De Gruyter, since 2014
25. Editor, Conference Proceedings Series, *Computational Techniques in Distributed Systems*, IFIP WG7.2, Springer Verlag, 1987-1992
26. Editorial Board of Book Series: *Modern Mechanics and Mathematics*, Springer Verlag, since 2006
27. *Advances in Nonlinear Analysis*, De Gruyter, since 2013.
28. *Pure and Applied Functional Analysis*, Yokohama Publishers, since 2015. <http://www.ybook.co.jp/pafa.html>
29. Editor in Chief (with A. Haraux and E. Zuazua) : *Journal of Abstract Differential Equations (JADEA)* , (Math-Res-Publishers) since 2010.
30. Editorial Advisory Board, De Gruyter-Versita. Since 2010.
31. Guest editor for several volumes: recently : in memory of A. Balakrishnan *AMO*,
32. 70 Birthday of Viorel Barbu *Pure and Applied Functional Analysis*,
33. In memory of I. Chueshov *DCDS - B* .

#### **IX(b) Offices and functions held**

1. IFIP, the International Federation for Information Processing, with headquarters based in Laxenburg, Austria (previously Geneva, Switzerland). URL: <http://www.ifip.org> About IFIP. IFIP, the International Federation for Information Processing, is the global professional federation of societies and associations for people working in Information and Communications Technologies and Sciences. Established under the auspices of UNESCO in 1960 and recognised by the United Nations, IFIP represents ICT professional associations from more than 50 countries and regions with a total membership of over half a million. It also brings together more than 3,500 scientists from industry and academia, organising them into over 100 Working Groups and 13 Technical Committees to conduct research, develop standards and promote information sharing. Based in Austria, IFIP organises and supports over 100 conferences each year, fostering the distribution of research and knowledge to academics and industry practitioners alike.

IFIP was founded in 1960 as the very first major international federation of the main computer societies under the auspices of UNESCO. Today IFIP has 52 organizations as full members representing research activities in the area of information technology and computing worldwide. It is organized into 13 technical committees

(TC) representing various areas of activities. A General Assembly (GA) of all its members and TC chairs have overall responsibility for all of IFIP's strategies.

IFIP's Mission Statement: *to be the leading, truly international organization which encourages and assists in the development, exploitation and application of Information Technology.* IFIP's Aims: *to foster international cooperation, to stimulate research, development and applications, and to encourage education and the dissemination and exchange of information in all aspects of computing and communication.*

Since 1989 I have been directly involved in activities and in a leadership role within the Technical Committee 7: TC7 (System Modeling and Optimization). These include coordinating activities of research groups in the area of Control and Optimization of Dynamical Systems and in running biannual General TC7 Conferences.

- Chair, the Working Group WG.7.2, TC7 IFIP: Computational Techniques in Distributed Systems, 1989–2002
- Vice-Chair, TC7 Committee on Modelling and Optimization: 1995–2001
- Chair, IFIP TC7 Committee on Modeling and Optimization, 2001–2008
- V-Chair of IFIP Technical Committee 7: TC7 on Modeling and Optimization, 2008 -present  
<http://www.ifip.org> and <http://www.math.virginia.edu/ifip>

2. Member, Nominating Committee for the *Kyoto Prize*, the Inamori Foundation, 1996, 1999, 2003, 2006 -2013
3. US Representative in IFIP, since 1996
4. IFIP Representative to FOCUS (Federation on Computing in the United States), 1996–1999
5. Board of Directors, ISAAC (International Society of Applied Analysis and Computations), since 1998
6. AMS Southeastern Section Program Committee, 1999–2001
7. ACM's TC7 IFIP Representative, 2000–present
8. International Advisory Board, Polish Academy of Sciences, since 2006
9. Nominating Committee for *Japan Prize*, Science and Technology Foundation of Japan (JSTF), 2001-2013
10. Nominating Committee *Kyoto Prize* founded by *Inamori Foundation*, 199-2014.
11. Member of CBMS-SIAM Panels and NSF Panels, 2001, 2003, 2005, 2006, 2007, 2008, 2009 ,2010, 2011,2012
12. Member of SIAM-NSF-AFOSR Panel on Perspectives and Trends in Control Theory, 1988
13. SIAM-PDE, Panel on Future Directions in Partial Differential Equations, Phoenix, AZ, December 13, 2007
14. SEARCDE, Southwestern Regional Conference Differential Equations, Steering Committee-member, 2010-2013.
15. Nominating Committee for the 2014 SIAM W.T. Idalia Reid's Prize.
16. AMS-Simons Travel Grants Committee for a term of three years, effective February 1, 2017 through January 31, 2020.
17. AMS-RCW [Research Collaborations ] Committee. 2017-2020.

#### **IX (c) Service to National Science Foundation and CBMS-NSF-SIAM**

- National Science Foundation: Member of PYI Panels (Principal Young Investigator's Program),
- Member of Special Panel on Perspectives and Trends in Control Theory, 1988;
- IGERT Panels, 2001,2003.
- DMS-PDE (Partial Differential Equations) Panels,

- DMS- Applied Analysis Panels,
- Control Theory and Optimization Panels,
- CBMS (Conference Board Mathematical Sciences) Panels, 2003- 2018

#### **IX(d) International scientific program committees (IPC)**

1. International Conference on Boundary Control and Boundary Variations, IFIP sponsored conference, Université de Nice, Nice, France, June 10–13, 1986
2. Conference on Control Problems for Systems Described by PDE's, University of Florida, Gainesville, FL, Feb. 3–6, 1986 (Chair)
3. International Conference on Control of Partial Differential Equations, IFIP sponsored conference, Santiago de Campostella, Spain, July 6–9, 1987
4. IIASA Conference on Modelling and Inverse Problems, Laxenburg, Austria, July 24–29, 1989 (Co-Chair)
5. IFIP Conference on Control and Stabilization, Clermont Ferrand, France, June 20–23, 1988
6. IFIP Conference on Optimal Control of Partial Differential Equations, Irsee, Germany, April 9–12, 1990
7. IFIP-TC7 Conference on Control Theory of Distributed Parameter Systems and Applications, Fudan University, Shanghai, China, May 6–9, 1990
8. International Conference on Boundary Control and Boundary Variations, organized by CNRS and École des Mines de Paris, Sophia-Antipolis, France, Oct. 15–17, 1990
9. 15th IFIP Conference on System Modelling and Optimization, Zurich, Switzerland, Sept. 2–6, 1991
10. 16th IFIP Conference on System Modelling and Optimization, Compiègne, France, July 5–9, 1993
11. International Conference on Boundary Control and Boundary Variations, Sophia Antipolis, France, June 8–12, 1992
12. IFIP Conference on Numerical Analysis and Optimization, Rabat (Morocco), Dec. 15–17, 1993
13. IFIP Workshop on Control of PDE's Santander (Spain), Sept. 5–9, 1994 (Chair)
14. IFIP Conference on Control of PDE's, Trento (Italy), Jan. 4–9, 1993
15. IFIP Conference on Modelling and Optimization of DPS with Applications to Engineering, Warsaw (Poland), July 17–21, 1995 (Chair)
16. 17th IFIP General Conference on Modeling and Optimization, Prague, July 10–14, 1995
17. SIAM Conference on Control and Systems Theory St. Louis, Missouri, April 27–29, 1995
18. First International Conference on Nonlinear Problems in Aviation and Aerospace, Daytona Beach, May 9–11, 1996
19. 18th IFIP General Conference on Modelling and Optimization, July 1997, Detroit (Co-Chair)
20. Conference on Control of PDE's, organized by CIRM, Luminy, France, June 16–21, 1997
21. IFIP Conference on Optimal Control: Theory and Algorithms, Gainesville, FL, March 1–4, 1997
22. International Symposium on Methods and Models in Automation and Robotics, MMAR Miedzyzdroje, Poland, Aug. 24–29, 1997
23. 19th IFIP General Conference on Modelling and Optimization, Cambridge, England, July 1999

24. International Conference honoring 90th birthday of L. S. Pontryagin, Moscow, Russia, Sept. 1–6, 1998
25. IFIP Conference on Distributed Parameter and Stochastic Systems, Huangzhou, China, June 19–22, 1998
26. IFIP Conference on Optimal Control of Partial Differential Equations, Chemnitz, Germany, April 20–24, 1998
27. International Symposium on Methods and Models in Automation and Robotics, MMAR Miedzydroje, Poland, Aug. 21–27, 1998
28. An International Conference on Distributed Systems: Optimization and Economic-Environmental Applications, sponsored by IIASA and IFIP, Ekaterinburg, Russia, May 23–26, 2000 (Co-Chair)
29. Advances in Control of Nonlinear Distributed Parameter Systems, Texas A&M University, Oct. 22–24, 1999
30. Optimal Control of Dynamical Systems, Oberwolfach, June 4–10, 2000
31. Third International Conference on Nonlinear Problems in Aviation and Aerospace, Daytona Beach, May 10–12, 2000
32. SIAM Control Conference, San Diego, July 2001
33. 20th IFIP General Conference on Modelling and Optimization, Trier, Germany, July 2001
34. 3rd ISAAC Congress, Berlin, Germany, Aug. 20–25, 2001
35. IMA–NSF Workshop on Geometric Methods in Inverse Problems and Control, Univ. of Minnesota, Minneapolis, July 2001 (Co-organized with C. Crooke, G. Uhlmann, and M. Vogelious)
36. IFIP Conference on Control Problems in PDE's, Constanza, Romania, September, 2002
37. 21st IFIP General Conference on Modeling and Optimization, Sophie Antipolis, France, July 21–25, 2003, Chair of IPC
38. ECCOMAS 2004, 4th European Congress on Computational Methods in Applied Sciences, Jyväskylä, Finland, July 24–28, 2004, Co-Chair of IPC Committee on Optimization and Control
39. Conference on Evolution Equations, Venezuela, January 7–14, 2003, Co-Chair with P. Lumer
40. International Conference on Distributed parameter Systems and Ecology, IAASA, Laxenburg, Austria, May 21–25, 2003
41. 9th IEEE-MMAR International Conference, Miedzydroje, Poland, August 30–September 1, 2003
42. ISAAC Congress, Toronto, August 11–16, 2003
43. WCNA 2004 Congress on Nonlinear Analysis, Orlando, June 30–July 5, 2004
44. 10th IEEE-MMAR International Conference, Miedzydroje, Poland, August 24–30, 2004
45. 22nd IFIP General Conference on Modeling and Optimization, Torino, Italy, July 2005, Chair of IPC
46. International Conference on Dynamical Systems and Differential Equations, June 16–19, 2004, Los Angeles, CA, member of IPC
47. 18th IFIP World Computer Congress, August, 22–27, 2004, Toulouse, France, member of IPC
48. Conference on Free and Moving Boundaries, Houston, December 2–4, 2004
49. The 7th IASTED International Conference on Control and Applications, CA 2005, May 18–20, 2005 Cancun, Mexico, member of IPC
50. Conference on Differential Equations and Dynamical Systems, Guelph, Canada, July 29–31, 2005

51. 11th IEEE-MMAR International Conference, Miedzyzdroje, Poland, August 27–September 2, 2005
52. International Congress on Applications of Mathematics (ICAM), Santiago de Chile, Chile, March 13–17, 2006, member of the IPC Committee for Control System Theory
53. ICNPAA 2006, Mathematical Problems in Aerospace Sciences, Budapest, Hungary, June 21–23, 2006
54. The First International Conference on Complex Systems and Applications. Hukhot, Mongolia, June 15–18, 2006
55. 12th IEEE-MMAR International Conference, Miedzyzdroje, Poland, August 27–September 2, 2006, member of IPC
56. The IASTED International Conference on Control and Applications, CA 2007, Montreal, Canada from May 30–June 1, 2007, member of IPC
57. 13th IEEE-MMAR International Conference, Miedzyzdroje, Poland, August 27–September 2, 2007, member of IPC
58. The 5th International Conference on Differential Equations and Dynamical Systems, December 16–18, 2006, Edinburg, TX, member of IPC
59. 23rd IFIP Conference on Modeling and Optimization, Krakow, Poland, July 23–27, 2007, Chair of IPC  
URL: <http://ifip2007.agh.edu.pl>
60. IASTED (International Conference on Control and Applications), Quebec, Canada, May 26–28, 2008, member of IPC
61. 24th IFIP Conference on Modeling and Optimization, Buenos-Aires, Argentina, July 2009, Chair of IPC
62. 7th AIMS (American Institute of Mathematical Sciences), Conference on Dynamical Systems and Differential Equations, May 18–21, 2008, Arlington. TX, member of the IPC
63. International Symposium on System Theory, Morocco, May 25–28, 2009, member of IPC
64. IASTED (International Conference on Control and Applications), ICA-2009, August 17–19, 2009, Honolulu, Hawaii, member of IPC
65. International Conference on Mathematical Control Theory, May 15-17, 2009, Chinese Academy of Sciences, Beijing, China
66. ICNPAA 2009, Mathematical Problems in Aerospace and Robotics, Rio de Janeiro, 2010 -member of IPC.
67. IASTED (International Conference on Control and Applications), ACIT0CDA-2010 , June 15-18, 2010, Novosybirsk, Russia , member of IPC
68. 25 IFIP Conference on Modeling and Optimization, Berlin, 2011. Co-Chair of IPC. <http://www.ifp2011.de/>
69. IASTED International Conference on Control and Applications (CA 2011), Vancouver, BC, Canada from June 01, 2011 to June 03, 2011.
70. IASTED <http://www.iasted.org/conferences/home-729.html>, (CA 2012), Crete, Greece, June 18-20, 2012.  
link:<http://www.iasted.org/conferences/home-781.html>
71. 26 IFIP Tc7 Conference on Modeling and Optimization, Klagenfurt, Austria, September 9-13, 2013.
72. IFAC Workshop on Control of Systems modeled by PDE's (CPDE13), Institute Henri Poincare, Paris, Sept. 25-27, 2013.
73. IASTED International Conference on Control and Applications (CA 2013), Honolulu, August 26-28, 2013.

74. Conference on Recent Advances in Mathematical Sciences-in honor of Prof. Lakshmikantham, Institute for Advanced Studies, Viskapatnam, India, Dec 19-22, 2013.
75. ICNPAA 2014-Mathematical Problems in Engineering, Aerospace and Science, Narvik University, Norway, July 15-18, 2014.
76. International Congress in Honor Of Ravi Agarval, Bursa, Turkey, June 323-26,2014
77. 27 IFIP TC7 Conference on Modeling and Optimization, Sophie Antipolis, France, 2015.
78. 13-th Workshop on PDE's, UFRJ, Rio de Janeiro, September 9-12, 2014.
79. SiAM Conference on Control and Its Applications, SIAM-CT15, Paris, July 8-10, 2015.
80. 16-th IASTED International Conference on Control and Applications (CA 2014),
81. MMAR-IEEE International Conference on Methods and Models in Automation and Robotics, Miedzyzdroje, August 24-27, 2015.
82. ICNPAA Congress 2016. 5-8 July, 2016. University de la Rochelle. La Rochelle, France.
83. XIV Workshop on Partial Differential Equations, LNCC, Petropolis-Rio de Janeiro, September 22-25, 2015.
84. IFAC Workshop on Control of Systems Governed by PDE's. June 13-15, 2016. Bartinoro Italy.
85. System Analysis: modeling and Control . Russian Academy of Sciences, Ekaterinburg, October 3-8, 2016  
<http://www.cpde2016.org>
86. 14;th EUROPT Workshop on Advances in Continuous Optimization, Warsaw, Poland, July 1-2, 2016.
87. Conference on Dynamical Systems and Applications, Institute of Mathematics, Lodz University of Technology, June 16-18, 2016.
88. XV WPDE RIO-2016-Workshop on Partial Differential Equations- LNCC Rio de Janeiro, September 13-16, 2016
89. GPCO 2017-7th German-Polish Conference on Optimization, Polish Academy of Sciences, Bedlewo. 27 August-1 September , 2017.
90. 28 IFIP Conference on Modeling and Optimization, Essen, July 2018,
91. MAO 2017-International Conference on Mathematical Analysis and Optimization, Sept 24-26, 2017, Suzou, China,
92. MMAR-IEEE 2018 . 23rd Intern. Conference on Methods and Models in Automatica and Robotics. Miedzyzdroje, Poland, August 23-30, 2018.
93. DEA -2019 "Dynamics, Equations and Applications". 16-20-September, 2019. AGH, Cracov, Poland
94. 3-rd IFAC Workshop on Control of Systems Governed by PDEs (CMPDE), May 20-24, 2019, Oaxaca, Mexico.
95. Conference on Evolution Equations: Applied and Abstract Perspectives. CIRM [Centre International de Recherche Mathematique] , Luminy, Oct 28-Nov1, France, 2019.
96. MMAR-IEEE Conference International program Committe , September, 2019
97. 100 Years of PTM, Krakow, 3-7 September, 2019.

#### **IX(e) Organizer of special sessions/minisymposia/conferences**

##### *A. Conferences*

1. IFIP Conference on Control Problems for Systems Described by Partial Differential Equations and Applications, University of Florida, Gainesville, Feb. 3–6, 1986
2. IFIP-IAASA Conference on Modeling and Inverse Problems, Laxenburg, Austria, July 14–29, 1989
3. IFIP Conference on Numerical Analysis and Optimization, Rabat, Morocco, Dec. 15–17, 1993
4. SIAM Symposium on Industrial Problems in Control, San Diego, CA, July 22–23, 1994
5. IFIP Conference on Modeling and Optimization with Applications to Engineering, Warsaw, Poland, July 17–21, 1995
6. 18th IFIP General Conference on Modelling and Optimization, Detroit, MI, July 22–25, 1997
7. AMS Summer Research Conference on Optimization and PDE's, Mt. Holyoke, June 16–20, 1996
8. IMA Workshop on Geometric Methods in Inverse Problems and Control, July 16–27, 2001
9. 21st IFIP Conference on System Modeling and Optimization, Sophia Antipolis, France, July 21–23, 2003
10. 22nd IFIP Conference on Modeling and Optimization, Torino, Italy, July 2005
11. AMS Summer Research Conference on Control of Nonlinear PDE Systems, Snowbird, Utah, July 3–8, 2005
12. 23rd IFIP Conference on Modeling and Optimization, Krakow, Poland, July 23–27, 2007, Chair of IPC
13. 24rd IFIP Conference on Modeling and Optimization, Buenos Aires, Argentina, July 25–29, 2009, V-Chair of the Conference
14. NSF Workshop Horizons in Infinite Dimensional Deterministic and Stochastic Systems with Applications to Engineering , Univ. of California, Los Angeles, UCLA, January 30–February 2, 2009
15. NSF-UCLA Workshop on Axial Flow and Flutter, UCLA, Nov. 19–22, 2012.
16. First IFAC Workshop CPDE , Institute Henri Poincare, Paris, France, Sept 25–27, 2013.
17. SEARCDE Conference 2013, University of Memphis. October 11–12, 2013.
18. AMS Sectional Conference, University of Memphis, October 17–18, 2015.
19. Banff International Research Station: Women in control: new trends in infinite dimensions (with K. Morris and L. De Teresa ) -July 16–21, 2017.

*B. Minisymposia, special sessions*

1. 26th CDC Conference, Special Session on Control of PDE's, Los Angeles, CA, 1987
2. 24th CDC Conference, Special Session on Control of PDE's, Fort Lauderdale, FL, Dec. 1985
3. 12th IFIP Conference, Special Session on Control of PDE's, Budapest, Sept. 1985
4. 23rd CDC Conference, Special Session on Control of PDE's, Las Vegas, NV, Dec. 1984
5. 21st CDC Conference, Special Session on Control of PDE's, Orlando, FL, Dec. 1982
6. 13th IFIP Conference on System Modellings and Optimization, Special Session on Distributed Parameters System, Tokyo, August–September 1987
7. 14th IFIP Conference on System Modelling and Optimization, Special Session on New Trends in Control Theory, Leipzig, Germany, July 3–7, 1989
8. 15th IFIP Conference on System Modelling and Optimization, Special Session on Numerical Techniques for Control Problems, Zürich, Switzerland, Sept. 2–6, 1991



9. 13th IMACS World Congress on Computation and Applied Mathematics, Special Session on Computational Techniques in Distributed Systems, Trinity College, Dublin, Ireland, July 22–26, 1991
10. ICIAM 91 International Conference on Industrial and Applied Mathematics, Minisymposium on Boundary Control Theory for Partial Differential Equations, Washington, DC, July 8–12, 1991
11. 15th IFIP Conference on System Modelling and Optimization, Special Sessions on Optimization and Stability Methods for Distributed Parameter Systems, and Numerical Techniques in DPS, Zürich, Switzerland, Sept. 2–6, 1991
12. 13th IMACS World Congress on Computation and Applied Mathematics, Special Session on Control of Distributed Parameter Systems, Dublin, Ireland, July 22–26, 1991
13. The Ulam Mathematics Conference, Special Session on Control Theory, Palm Beach, April 3–5, 1991
14. IFIP Workshop on Control of PDE's, Trento, Italy, Jan. 4–9, 1993
15. IFIP Workshop on Control of PDE's, Laredo, Spain, Sept. 5–9, 1994
16. Minisymposium on Nonlinear Problems in Control Theory, at the SIAM Conference on Control and Systems Theory, St. Louis, MO, April 27–29, 1995
17. ICIAM 95 Third International Congress on Industrial and Applied Mathematics, Minisymposium on Control Problems for PDE's, Hamburg, Germany, July 3–7, 1995
18. SIAM Minisymposium on Control of Large Scale Sytems, Charlotte, NC, Oct. 23–26, 1995
19. IFIP Conference on Modeling and Optimization, Warsaw, Poland, Session on Control of PDE's, July 17–21, 1995
20. 18th IFIP Conference on Modeling and Optimization, Detroit, MI, Minisymposium on Nonlinear Control Problems in PDE's, July 21–24, 1997
21. 37th IEEE CDC Conference, Special Session on Control of Interactive Structures, Tampa, FL, Dec. 16–18, 1998
22. 19th IFIP Conference, Special Sessions (3) on Control of PDE systems, Cambridge, July 16–19, 1999
23. International Conference on Dynamical Systems and Differential Equations, Minisymposium on Optimization of Interactive PDE Structures, Atlanta, GA, May 18–21, 2000
24. Conference on Nonlinear Problems in Aviation, Special Session on Control of Distributed Parameter Systems, Daytona Beach, FL, May 9–12, 2000
25. IMACS Congress, Minisymposium on Wellposedness and Asymptotic Behavior of Nonlinear Dynamics Arising in Shell Theory, Lausanne, Switzerland, Aug. 2000, co-organized with I. Chueskov
26. ISAAC Congress, Special Session on Nonlinear Waves, Berlin, Germany, Aug. 21–25, 2001, co-organized with H. Koch, Univ. of Heidelberg
27. Annual SIAM Conference on Control, Minisymposium on Control Theory for Interactive PDE's, San Diego, CA, July 11–14, 2001, co-organized with G. Avalos and J. Cagnol
28. Minisymposium on Nonlinear Waves, SIAM Annual Conference, Philadelphia, July 8–12, 2002
29. Workshop on Nonlinear waves, University of Virginia, December 6–9, 2002
30. Minisymposium on Control of PDE's within 21-st IFIP Conference on Modeling and Optimization, Sophia Antipolis, France, July 21–25, 2003
31. Minisymposium on Control of Nonlinear PDE Systems, co-organized with G. Avalos and F. Bucci, within 22nd IFIP Conference on Modeling and Optimization, Torino, Italy, July 17–21, 2005

32. Special session on Asymptotic stability and long time behavior of nonlinear PDE dynamics, 5th ISAAC Congress, Catania, Italy, July 24–29, 2005
33. Minisymposium (5 invited sessions) on New Developments in Nonlinear PDE's, organized with G. Todorova at the AIMS Conference on Dynamical Systems and Differential Equations, Poitiers, France, June 25–28, 2006
34. Special Session on Nonlinear Evolutionary PDE Systems and their Control, organized with G. Avalos at the AMS Conference, Johnson City, TN, Oct 15–16, 2005
35. Minisymposium on Control of Partial Differential Equations, organized with G. Avalos and J. Cagnol, within the 23rd IFIP Conference on Modeling and Optimization, Krakow, Poland, July 23–27, 2007
36. Joint AMS-PTM Meeting, Warsaw, Poland, July 27–August 3, 2007, organizer (jointly with J. Sokolowski) of Special Session on Control and Optimization of Nonlinear PDE Systems
37. Special Session organized within AIMS 10th Conference on Dynamical Systems, Arlington, Texas, May 18–21, 2008
38. World Congress of Nonlinear Analysis, Orlando, FL, July 1–5, 2008, organizer (jointly with L. Tebou) of Special Session on Control of Nonlinear PDE's
39. Conference in honor of L. Pontryagin, Moscow, Russia, June 17–20, 2008, organizer of Special Session on Control Theory and Differential Games (with M. Zelikov)
40. 7th ISAAC Congress, Imperial College, London, GB, July 13–18, 2009 Organizer (with F. Bucci) of a special session Society for Analysis, its Applications and Computation  
<http://www.isaac2009.org/Congress/Welcome.html>
41. 24th IFIP TC7 Conference on System Modelling and Optimization, July 27–31, 2009, Buenos Aires, Argentina, minisymposium organized with G. Avalos, J. Cagnol, and M. Delfour on Control Problems for Evolutionary PDE's <http://www.ifip2009.org/>
42. SIAM -PDE Conference, December 7-11, 2009, Miami, Fla. Minisymposium on Analysis and Control of Evolutionary Nonlinear PDE-Interactive Systems (with G. Avalos) .
43. 8-th AIMS Conference on Dynamical Systems and Differential Equations, May 25-29, 2010, Dresden, Germany. Special session (with G. Todorova) on New Developments in Qualitative Behavior of Nonlinear Evolutionary Equations, url: <http://www.aimsconferences.org/AIMS-Conferences/conf-reg2010>
44. SIAM Conference on PDE-s, San Diego, Nov. 14-17, 2011, Special Invited session "Fluid Structure and Flow Structure Interactions-Modeling and Control", organized with G. Avalos and L. Bociu .
45. 9-th AIMS Conference on Dynamical Systems, Orlando, July 1-5, 2012. Special Invited Session " Nonlinear PDE's and Control Theory with Applications." Organized with L. Bociu, B. Kaltenbacher and P. Radu.
46. SIAM Annual Meeting, Minneapolis, July 9-13, 2012, Minisymposium on "Control Problems for partial Differential Equations", in honor of Walter Littman, organized with Steve Taylor and R. Triggiani.
47. Festschrift for Bob Gilbert. Mathematical Analysis with Applications to Biology. University of Delaware, August 809, 2012.
48. ISAACS Conference on Analysis and Applications. Minisymposium on Control and Optimization of Nonlinear Systems. (with J. Webster and G. Avalos), Krakow, Poland, August 5-9, 2013.
49. SIAM Conference, San Diego, July 7-10, 2013. Minisymposium (with B. Mordukovitch ) Control and Stabilization of Nonlinear PDE's.
50. SEARCDE Conference, University of Memphis, October 11-12, 2014.
51. Banff International Research Station: Women in control: new trends in infinite dimensions (with K. Morris and L. De Teresa ) -July 16-21, 2017.

52. SIAM PDE, Special Session on Fluid Structure Interactions (with M. Disconizi), Baltimore, December 9-11, 2017.
53. IFIP 28-th TC7 Conference on Modeling and Optimization, Essen, Memorial session: In Memory of Igor Chueshov, (with J. Webster) July 2018.
54. ICNPAA Congress 2018-Mathematical Problems in Engineering, Aerospace and Science. Yerevan Armenia, July 3-6, 2018.
55. Banff International Research Center , BIRS Conference on New Trends in Control of Infinite Dimensional Systems, Banff, Canada, July 16-21, 2017.
56. Special Session on Control in Infinite Dimensional Systems at the AWM Research Symposium, Rice University, April 6 - 7, 2019 (<https://sites.google.com/site/awmmath/home/RS17/RS19>)

#### **IX(f) Service to UVa (major committees; samples since 2000)**

1. Mathematics Department Search Committee (2000–01, 2001–02, 2007–08)
2. P&T (Promotion and Tenure) Committee, College of Arts and Sciences (2002–04)
3. Committee on Restructuring Graduate Program, Department of Mathematics (2002–03)
4. Graduate Committee, Department of Mathematics (since 2002)
5. Director of Graduate Studies, Department of Mathematics (2004–09)
6. Graduate Advisor, Department of Mathematics (2007–09)
7. Graduate Admissions (Chair), Department of Mathematics (2008–09)
8. Steering Committee, Department of Mathematics (2007–10)
9. GAANN (Graduate Assistance in the Areas of National Needs) from the Department of Education, \$750,000 (2009-12), Co-PI with K. McCrimmon, L. Thomas, B. MacCluer (PI: J. Imbrie)
10. Dept. Search Committee for Departmental External Chair 2011.
11. Co-PI of GAANN (Graduate Assistance in the Areas of National Needs) Proposal, 2012.

### **X INVITED PRESENTATIONS (1985–present)**

#### **X(a) Plenary speaker (keynote lecturer) at the conferences**

1. 12th IFIP Conference on System Modelling and Optimization, Budapest, Hungary, Sept. 2–6, 1985
2. SEARCDE Southeastern AMS Atlantic Conference on Differential Equations, Georgia Institute of Technology, Atlanta, Oct. 25–26, 1985
3. IFIP Conference on Boundary Control and Boundary Variations, Nice, France, June 10–13, 1986
4. NSF–AFOSR Conference on Control of Systems Governed by PDE’s, Montreal, CA, Oct. 5–9, 1986
5. International Conference on Control Problems for PDE’s, Santiago de Compostela, Spain, July 6–9, 1987
6. Modelling, Information Processing and Control, MIPAC Conference; University of Wisconsin, Madison, May 15–18, 1988
7. Perspectives in Control Theory, Polish Academy of Sciences, Sielpia, Sept. 19–24, 1988
8. SIAM Annual Meeting, Chicago, IL, July 15–20, 1990

9. 10th INRIA International Conference on Analysis and Optimization, Nice, France, June 9-12, 1992
10. 2nd International SIAM Conference on Mathematical and Numerical Aspects of Wave Propagation, Univ. of Delaware, June 7-10, 1993
11. 8th Annual Three Rivers Applied Mathematics Colloquium, University of Pittsburgh, April 1-2, 1995
12. IFIP Conference on Control of PDE's, Laredo, Spain, Sept. 4-9, 1994
13. 34th CDC-IEEE Conference, New Orleans, Louisiana, Dec. 13-16, 1995
14. MTNS Conference, St. Louis, MO, June 24-28, 1996
15. 2nd Congress on Nonlinear Analysis, Athens, Greece, June 10-17, 1996
16. Principal Lecturer, Barrett Lectures, University of Tennessee, Knoxville April 1997
17. International Conference on Applied Analysis, Samos, Greece, July 4-9, 1996
18. ISAAC Congress 97, Delaware, MD, June 3-7, 1997
19. Conference on Stochastic and Deterministic Control, Scuola Normale Superiore, Pisa, Italy, July 3-7, 1997
20. 98- IEEE-MMAR Conference, Miedzyzdroje, Poland, Aug. 24-27, 1998
21. First International Conference on Semigroups, in honor of R. Phillips, Newport Beach, CA, Dec. 14-16, 1998
22. Control of Systems Governed by PDE's, Univ. of Nancy, France, March 8-12, 1999
23. Principal Lecturer at the NSF-CMBS Conference on Mathematical Control Theory of Coupled PDE's, Univ. of Nebraska, Lincoln, Aug. 4-10, 1999
24. Control of Nonlinear Distributed Parameter Systems, Conference in honor of 60th birthday of D. Russell, Texas A&M University, Oct. 22-24, 1999
25. German-Polish Conference on Optimization-Methods and Applications, Zagan, Poland, Sept. 14-18, 1999
26. AMS Conference on Differential Geometric Methods of PDE's, Boulder, Colorado, June 27-July 1, 1999
27. AIMS International Conference on Dynamical Systems and Differential Equations, Atlanta, GA, May 18-21, 2000
28. 29th Conference on Applied Mathematics (IEEE Distinguished Lecturer), Zakopane, Poland, Sept. 19-26, 2000
29. Second Meeting on Inverse Problems, Gargnano, Italy, April 1-7, 2001
30. International Conference on Dynamics of Continuous Systems, London, Canada, July 27-31, 2001
31. SIAM Annual Meeting and Control Conference, San Diego, July 9-13, 2001
32. Autumn School on Semigroups and Evolutions, CNRS, Trento, Italy, November 1-5, 2001
33. French-German Conference on Optimization, Cottbus, Germany, September 9-13, 2002
34. Symposium on Partial Differential Equations: Iguacu, Brazil, December 17-19, 2003
35. Barrett Lectures, University of Tennessee, April 28-30, 2005
36. Differential Equations and Dynamical Systems, Guelph, Canada, July 29-31, 2005
37. Conference on Differential and Difference Equations with Applications, Melbourne, FL, August 1-5, 2005
38. ICNPAA 2006 Mathematical Problems in Engineering, Budapest, Hungary, June 21-23, 2006

39. The International Conference of Hybrid Systems and Applications, Lafayette, LA, May 22–26, 2006
40. Advances in Control theory of Partial Differential Equations, Univ. of Maryland, Oct. 28–29, 2006
41. Congres of Applied Mathematics, Lima, Peru, January 9-12, 2007
42. Functional Analysis and Optimization, in honor of S. Rolewicz, Bedlewo, Poland, Septebmber 17–21, 2007
43. WCNA 2008 Fifth World Congress of Nonlinear Analysis, July 2–9, Orlando, FL, 2008
44. 6th International Conference on Differential Equations and Dynamical Systems, Baltimore, May 22–25, 2008
45. 50 Years of Control Theory, Polish Academy of Sciences, Bedlewo, September 15–22, 2008
46. International Conference on Differential Equations and Topology, dedicated to 100th birthday of L. S. Pontryagin. Moscow State Univ., June 18–25, 2008
47. Systems Theory, Modelling, Analysis and Control, Fes, Morocco, May 25–28, 2009
48. SEARCDE-29 , Southeastern Regional Conference on Differential Equations , , Macon. Georgia, October, 16-17, 2009
49. ICNPAA 2010: Mathematical Problems in Engineering, Aerospace and Sciences, INPE, San Jose dos Campos, Brazil, June 30–July 3, 2010
50. Analysis Days, King Fahd University of Petroleum and Minerals (KFUPM) , Dhaharan. Dec 21-23, 2010.
51. Summer School: Nonlinear Hyperbolic PDE's, Dispersive and Transport Equations: Analysis and Control. Sissa, Trieste , Italy, May 16-July 26, 2011 (7 lectures)
52. Summer School on Linear and Nonlinear Evolutions. Istambul, July 1-30, 2011. (4 lectures)
53. 2011 SIAM Reid Prize Lecture, Hyatt Regency, Baltimore, July 27, 2011
54. ICNPAA 2012 Congress: Mathematical Problems in Engineering, Aerospace and Sciences. Vienna University of Technology, Vienna, Austria, July 10-14, 2012
55. ANCNA -Conference on Communications in Nonlinear Analysis, Bolu, Turkey, July 3-6, 2013.
56. Conference on Theory , Methods and Applications of Differential Equations, Kingsville, TX, Dec 17-21, 2012.
57. One of the Four Main Lecturers at the **Course on Recent Advances in Partial Differential Equations** , University of Milano, Italy, June 17-22, 2013 (6 lectures)
58. EQUADIFF 13, Prague, Czech Republic, August 26-30, 2013.
59. Ellis B. Stouffer's Distinguished Lecture, University of Kansas, December 3, 2013.
60. PDE Conference COPDE ,Novacella, Italy, May 28 -June 1, 2014.
61. International Conference on Hyperbolic Problems, IMPA, Rio de Janeiro, Brazil, July 28th-August 1, 2014.
62. Workshop on Shape Optimization and Topology Optimization with PDE Constraints- in honor of J. Sokolowski- LNCC, Petropolis-Rio de Janeiro , August 11-15, 2014.
63. Recent Trends in Nonlinear PDE's -NPDE 2014 , 28-30 May, 2014, Trieste, Italy.
64. Shanks Workshop on Mathematical Aspects of Fluid Dynamics, Vanderbilt University, February 28-March 1, 2015.
65. Plenary Speaker (one of four) at SIAM-SEAS 2015. March 20-25, 2015. University of Alabama.

66. Plenary speaker (one of three) at the Ninth IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena. Georgia Center, University of Georgia, April 01-04, 2015
67. 7-th International Conference on Dynamic Systems and Applications. Atlanta, May 27-30, 2015.
68. Mathematical Fluid Mechanics:Old Problems, New Trends. Banach Center, Bedlewo, 30 August-5 September, 2015
69. AMS Conference at Stony Brook, March 19-20, 2016. One of the three Plenary speakers.
70. International Conference on Evolution Equations and Shanks Lecture, Vanderbilt University, Nashville, May 16-20, 2016.
71. Nonlinear PDE's in Applied Mathematics, Izmir Institute of Technology, Turkey, August 28-30, 2016. One of the four plenary speakers.
72. Oberwolfach Seminar 2016, Nov 20-26, 2016. Plenary lecturer.
73. Banff International Research Station. Workshop on Control Theory of Infinite dimensional Control Systems, July 16-21, 2017. Main Speaker.
74. Conference on Automatic 2017. One of the four plenary speakers. Cracov, June 16, 2017,
75. GPCO 2017-7th German-Polish Conference on Optimization, one of the 6 plenary speakers. 27-08-01-09, 2017, Bedlewo-Polish Academy of Sciences, Poland.
76. Conference on Recent Advances in Mathematical Sciences and Applications (RAMSA-17), at GVP College of Engineering, Visakhapatnam, India.19th to 22nd December, 2017
77. Paths in Mathematical Control Theory, Torino, March 25-27, 2018. One of the three plenary speakers.
78. The Third International Conference on the Dynamics of Differential Equations-Fundamentals and Developments, In Memory of Professor Jack. K. Hale, Hiroshima, March 14-March 18, 2018.
79. Emerging Trends in Applied Mathematics and Mechanics, Jagiellonian University, Ktracov, Poland June 18-22, 2018. One of the four plenary speakers.
80. SMACS 2018-Special Materials and Complex Systems. Palazzo Feltrinelli, Garganano, Italy, June 18-22, 2018.
81. Workshop on Dynamics, Control and Numerics for Fractional PDE's, [one of the 5 Plenary Lectures], Embassy Suites, San Juan, Dec 4-8, 2018.
82. Workshop on Fluid Structure Interactions, University of Milano, March 19-24, 2019.
83. IFAC Workshop on Distributed Parameter Systems, CMPDE, May 20-24, 2019, ,Oaxaca, Mexico
84. Romanian Congres of Mathematcs, Galati, Romania , July 28-August 1, 2019.

#### **X(b) Invited conference speaker**

#### **1985**

1. 2nd International Conference on Control Theory for Distributed Parameter Systems and Applications, Vorau, Austria, July 9-14, 1985
2. International Conference on Theory and Applications of Differential Equations, Edinburg, TX, May 20-23, 1985
3. International Conference on Differential Equations in Banach Spaces, University of Bologna, Bologna, Italy, July 1-5, 1985
4. 24th IEEE Conference on Decision and Control (SIAM-invited paper), Ft. Lauderdale, Dec. 11-13, 1985

5. NSF–AFSOR–NASA Workshop on Control Systems Governed by Partial Differential Equations with Applications to Large Flexible Structures (invited panel leader), Tampa, FL, March 4–8, 1985
6. NASA–UCLA Workshop on Computational Techniques in Identification and Control of Flexible Flight Structures, Lake Arrowhead, CA, Nov. 2–4, 1985

**1986**

7. Operator Methods of Optimal Control Problems (Special Session), Annual Meeting of the American Mathematical Society, New Orleans, LA, Jan. 7–11, 1986
8. Conference on Optimal Control with Partial Differential Equations, Oberwolfach, May 18–24, 1986
9. Conference on Control and Identification of Distributed Systems, Vorau, Austria, July 6–12, 1986
10. AMS Conference on Semilinear Parabolic and Hyperbolic Equations, Charlotte, NC, Oct. 17–18, 1986

**1987**

11. International Conference on Evolution Equations, Scuola Normale Superiore, Pisa, Italy, Feb. 1987
12. Conference in Honor of A. V. Balakrishnan's Sixtieth Birthday, Washington, DC, June 16–19, 1987
13. Trends in Semigroups and Applications, International Conference, Trieste, Italy, Sept. 28–Oct. 3, 1987
14. Combined Midwest-Southeast Differential Equations Conference, Vanderbilt University, Oct. 23–24, 1987
15. 26th IEEE Conference on Decision and Control, Los Angeles, CA, Dec. 9–11, 1987
16. COMCON Workshop on Stabilization of Flexible Structures, Montpellier, France, Dec. 11–15, 1987

**1988**

17. 8th International Conference Analysis and Optimization of Systems, INRIA, Antibes, June 8–10, 1988
18. 4th International Conference on Control at Distributed Parameter Systems, Vorau, Austria, organized by the University of Graz, July 10–16, 1988
19. IFIP Conference on Control Boundaries and Stabilization, Clermont-Fernoud, France, June 20–23, 1988
20. AMS Special Session on Control Theory, University of Kansas, Lawrence, Oct. 28–29, 1988
21. 27th IEEE Conference on Decision and Control, Austin, Texas, Dec. 7–9, 1988
22. Mathematical Science Institute Conference on Applications of Microlocal Analysis, Cornell University, Ithaca, NY, Nov. 28–Dec. 3, 1988

**1989**

23. SIAM Conference on Control in the 90's, San Francisco, May 17–18, 1989
24. General IFIP Conference on Modelling and Optimization, Leipzig, E. Germany, July 3–7, 1989
25. IIASA–IFIP Conference on Modelling and Inverse Problems, Laxenburg, Austria, July 24–29, 1989
26. International Conference on Differential Equations, Colorado Springs, June 7–10, 1989
27. 28th IEEE–CDC Conference, Tampa, Dec. 13–16, 1989
28. Workshop on Control Theory, Pisa, July 16–18, 1989

**1990**

29. AMS Annual Meeting, Louisville, KY, Jan. 17–18, 1990

30. 2nd Symposium on Optimal Design and Control of Structures, Jablone, Poland, June 4–9 1990
31. International Conference on Optimal Control of Partial Differential Equations, organized by Univ. of Augsburg, Irsee, Germany, April 9–12, 1990
32. 4th NASA Workshop on Computational Control of Flexible Aerospace Systems, Williamsburg, VA, July 11–13, 1990
33. NSF Conference on Mathematical Control Theory, IIT, Bombay, Dec. 10–15, 1990
34. The 29th IEEE Conference on Decision and Control, Honolulu, Hawaii, Dec. 5–7, 1990

#### 1991

35. NSF–CBMS Regional Conference on Nonlinear Dispersive Wave Systems, Orlando, FL, March 11–15, 1991
36. AMS Special Session, Operator Methods in Control Theory Tampa, FL, March 22–23, 1991
37. SIAM Conference ICIAM 91, Washington, DC, July 8–12, 1991
38. Meeting on Differential Equations in Banach Spaces, Bologna, Italy, July 1–5, 1991
39. International Workshop-Conference on Evolution Equations, Control Theory and Biomathematics, Hans-sur-Lesse, Belgium, Oct. 20–26, 1991
40. NSF Workshop on Stochastic Theory and Adaptive Control, Lawrence, KS, Sept. 26–28, 1991

#### 1992

41. IMA Workshop on Control, Univ. of Minnesota, Nov. 9–13, 1992
42. IFIP Conference of Boundary Control and Boundary Variations, Nice, France, June 3–5, 1992
43. First World Congress of Nonlinear Analysis, Tampa, FL, Aug. 19–26, 1992
44. SIAM Conference on Control, Minneapolis, Minnesota, Sept. 17–18, 1992
45. AMS Annual 1992 Meeting, Baltimore, MD, Jan. 8–11, 1992

#### 1993

46. AMS Annual 1993 Meeting, San Antonio, Texas, Jan. 13–16, 1993
47. IFIP Workshop, Univ. of Trento, Italy, Jan. 4–9, 1993
48. AMS Annual Meeting, Special Session on Control and Stability, San Antonio, TX, Jan. 13–16, 1993
49. Conference on Optimal Control of Differential Equations, Ohio Univ., Athens, Ohio, March 25–27, 1993
50. Conference on Control and Estimation of Distributed Parameter System, Univ. of Graz, Vorau, Austria, July 18–24, 1993
51. First International Conference on Dynamic Systems and Applications, Atlanta, Georgia, May 26–29, 1993
52. Minisymposium on Control of PDE's, Texas A&M Univ., College Station, Oct. 21, 1993
53. AMS Meeting/Special Session, College Station, TX, Oct. 22–23, 1993
54. 32nd IEEE Conference on Decision and Control, San Antonio, TX, Dec. 15–17, 1993

#### 1994

55. SIAM Annual Meetings, San Diego, CA, 1994



- 56. AFOSR Workshop on Optimal Design, ICIAM Blacksburg, VA, April 8–9, 1994
- 57. IAC Workshop on Control and Applications, Rome, Italy, July 11–13, 1994
- 58. ICCAM 94th International Conference on Computational and Applied Mathematics, Leuven, Belgium, July 25–30, 1994
- 59. IFIP Conference on Control of Partial Differential Equations, Loreda, Spain, Sept. 4–9, 1994
- 60. 4th International Conference on Evolution Equations, Pisa, Italy, Sept. 26–30, 1994

**1995**

- 61. AMS Meetings, Orlando, FL, March 17–18, 1995
- 62. ICIAM 95, Hamburg, Germany, July 3–7, 1995
- 63. 17-th IFIP Conference on Modeling and Optimization, Prague, July 10–14, 1995
- 64. IFIP Conference, Warsaw, Poland, July 17–21, 1995
- 65. SIAM Annual Meeting, Charlotte, NC, Oct. 23–26, 1995

**1996**

- 66. SIAM Annual Meeting, Kansas City, KS, June 21–25, 1996
- 67. Conference on Nonlinear Problems in Aerospace, Daytona Beach, FL, May 9–11, 1996
- 68. SPIE's 1996 Symposium, San Diego, CA, Feb 25–29, 1996
- 69. MMAR-96 Conference, Miedzyzdroje, Poland, Sept. 10–13, 1996
- 70. AMS Conference on Mathematical Aspects of Wave Propagation, Chattanooga, TN, Oct. 11–12, 1996

**1997**

- 71. SPIE Conference on Smart Structures and Materials, San Diego, CA, Feb. 4–7, 1997
- 72. ISSAC Congress, Invited Session on Mathematical Methods in Wave Propagation, June 6, 1997
- 73. IFIP Conference on Optimal Control, Gainesville, FL, Feb. 27–Mar. 1, 1997
- 74. CIRM Conference on Control of PDE's, Luminy, Marseille, France, June 16–21, 1997
- 75. 18th IFIP General Conference on Modeling and Optimization, Detroit, MI, July 21–24, 1997
- 76. International Conference on Dynamics and Control of PDE's, Guanajuato, Mexico, Nov 29–31, 1997

**1998**

- 77. Semester on Control Theory of PDE's, Institut Henri Poincaré, Paris, France, March 9–13, 1998
- 78. Workshop on Thermoelasticity, Nat. Lab. Scientific Comp., Rio de Janeiro, Brazil, March 16–20, 1998
- 79. International Conference on Control of PDE's, Chemnitz University, Germany, April 20–25, 1998
- 80. 4th SIAM Conference on Control and its Applications, Jacksonville, FL, May 7–9, 1998
- 81. Conference on Control of Distributed Parameter and Stochastic Systems, Hangzhou, China, June 19–22, 1998
- 82. Conference on Semigroups of Operators, Newport Beach, CA, Dec. 14–18, 1998
- 83. Invited SIAM lecture at 37th IEEE CDC Conference, Tampa, FL, Dec. 16–18, 1998

## 1999

- 84. AMS Meeting, Invited Session on Control and Dynamics of PDE's, Las Vegas, NV, April 10–11, 1999
- 85. ICIAM 99, Invited Session on Control of Shells, Edinburgh, Scotland, July 5–9, 1999
- 86. 19th IFIP Conference, Invited Session on Control of DPS Systems, Cambridge, England, July 12–16, 1999
- 87. AMS Southeastern Meeting, Invited Session on Optimal Control and Computational Optimization, Charlotte, NC, Oct. 15–17, 1999
- 88. 38th IEEE CDC Conference, Invited Session on Control of Distributed Systems, Phoenix, AZ, Dec. 7–10, 1999

## 2000

- 89. AMS Annual Meeting, Invited Session on Differential Geometric Methods in Control Theory, Washington, DC, Jan. 19–21, 2000
- 90. 3rd International Conference on Nonlinear Problems in Aviation and Aerospace, Daytona Beach, FL, May 10–12, 2000
- 91. International Conference on Distributed Systems, Ekaterinburg, Russia, May 30–June 2, 2000
- 92. International Workshop on Differential Equations and Optimal Control, Ohio University, May 12–14, 2000
- 93. Conference on Optimal Control of Dynamical Systems, Oberwolfach, June 4–10, 2000
- 94. Workshop on PDE's, Thermo-Visco Elasticity, University of Konstanz, Germany, July 31–Aug. 4, 2000
- 95. IMACS World Congress, Invited Session on Wellposedness and Qualitative Behaviour of Solutions to Nonlinear Shell Theory, Lausanne, Switzerland, Aug. 21–25, 2000
- 96. Third World Congress of Nonlinear Analysis, Catania, Sicily, July 19–26, 2000
- 97. PDE Conference, Virginia Tech. University, Blacksburg, VA, Oct. 15–16, 2000

## 2001

- 98. AMS Conference, Invited Session on Calculus of Variations and Nonsmooth Analysis, Lawrence, KS, March 30–April 1, 2001
- 99. Workshop on Wellposedness in Optimization and Nonsmooth Analysis, Banach Center, Warsaw, Poland, Sept. 10–15, 2001
- 100. ISAAC Congress, Invited Session on Geometric Methods and PDE's, Berlin, Germany, Aug. 20–25, 2001
- 101. AMS Conference, Invited Session on Wave Propagation, Chattanooga, TN, Oct. 5–7, 2001

## 2002

- 102. AMS Annual Conference, Invited Session on Nonlinear PDE's, Jan. 7–11, 2002
- 103. Conference on Evolution Equations and Semigroups, INDAM Palazzone in Cortona, Italy, April 8–12, 2002
- 104. First Joint International Meeting AMS-Unione Matematica Italiana, Pisa, Italy, June 12–16, 2002
- 105. Conference on Differential Equations and Nonlinear Dynamics. University of Alberta, Edmonton, Alberta, Canada, July 7–12, 2002
- 106. SIAM Annual Conference, Invited Session on Shape Optimization, Philadelphia, July 8–12, 2002
- 107. Conference on PDE's and Optimization, Romanian Academy of Sciences, Constanza, Romania, September 10–14, 2002

## 2003

- 108. Institut Mittag-Leffler, Semester on Mathematical Control Theory, Jan. 2003
- 109. Conference on Semigroups and Evolutions, Gargnano, Italy, March 31–April 4, 2003
- 110. 3rd International Conference on Engineering, Applications and Computational Algorithms, Guelph, Ontario, Canada, May 15–18, 2003
- 111. IIASA Workshop on Control of Distributed Systems and Environmental Applications, Laxenburg, Austria, May 26–18, 2003
- 112. Conference in honor of J. Lagnese, Washington, DC, May 29–June 3, 2003
- 113. 21st IFIP Conference on System Modeling and Optimization, invited session, Sophia Antipolis, France, July 21–25, 2003
- 114. 9th IEEE International Conference on Methods and Models in Automation and Robotics, Invited Session on Optimization of Infinite-Dimensional Systems, Miedzyzdroje, Poland, August 25–28, 2003
- 115. 4th ISAAC Congress (International Society for Analysis, Applications and Computations), Special Session on Inverse Problems, Toronto, Canada, August 11–16, 2003
- 116. 5th Congress of Romanian Mathematics, Pitesti, Romania, June 22–28, 2003

## 2004

- 117. Workshop on Boundary Control and Optimization, Pisa, February 26–28, 2004
- 118. AIMS Conferene on Differential Equations and Dynamical Systems, Los Angeles, CA, June 15–19, 2004
- 119. SIAM Conference on Nonlinear Waves and Coherent Structures, invited session, Orlando, Oct. 2–5, 2004
- 120. Workshop on Optimal Control of ODEs Conference, dedicated to Czeslaw Olech. Banach Center, Warsaw, Poland, September 1–5, 2004
- 121. IFIP Conference on Free an Moving Boundaries, Houston, Dec 2–4, 2004

## 2005

- 122. AMS Conference, Southeastern Section, invited session, Bowling Green, KY, March 2005
- 123. AMS Conference, Eastern Section, invited session, Newark, DE, April 2–3, 2005
- 124. Oberwolfach Conference on Optimal Control of Coupled Systems of PDE's, Oberwolfach, April 17–23, 2005
- 125. Workshop on Inverse Problems, Charlotte, NC, May 27–30, 2005
- 126. 5th ISAAC Congress, Catania, Italy, July 25–30, 2005
- 127. 22nd IFIP Conference on Modeling Optimization, Torino, Italy, July 17–21, 2005
- 128. AMS Summer Research Conference on Control Methods in PDE Dynamical Systems, Snowbird, Utah, July 3–7, 2005
- 129. Workshop on Boundary Value Problems, Computation and Control, UCLA, Los Angeles, CA, September 19–23, 2005
- 130. Conference on Evolution Equations, Applications to Physics and Engineering, Luminy, France, October 24–28, 2005
- 131. MMAR 2005–IEEE Conference, Miedzyzdroje, Poland, August 29–September 1, 2005

## 2006

132. AIMS Conference on Dynamical Systems and Differential Equations, Special Session Infinite-Dimensional Dynamical Systems, Poitiers, France, June 25–28, 2006
133. AMS Conference, Special Session Harmonic Analysis and PDE's, Miami, FL, April 1–2, 2006
134. Fluids and Waves-Recent Trends in Applied Analysis, Memphis, TN, May 11–13, 2006
135. SIAM Conference on Analysis of PDE's, Invited Session on Structure Interactions with Fluid Gas Flows and Acoustical Waves, Boston, MA, July 10–12, 2006
136. IEEE-MMAR 2006, Miedzyzdroje, Poland, August 28–31, 2006
137. Evolutions Equations 2006, in memory of G. Lumer, Univ. of Mons, Mons, Belgium, August 28–September 1, 2006
138. International Conference on Differential Equations, dedicated to Y. Lopatinsky, Lviv, Ukraine, September 12–17, 2006
139. Workshop on PDE's, Rio de Janeiro, Brazil, September 12–15, 2006
140. Advances in Control of PDE's, in honor of the 70th birthday of T. Seidman, Univ. of Maryland, October 28–29, 2006

## 2007

141. Workshop on Direct, Inverse and Control Problems for PDE's (DICOP), Rome, Italy, June 25–28, 2007
142. International Conference on Theoretical and Numerical Fluid Mechanical, in honor of P. Galdi, Vancouver, Canada, August 11–17, 2007
143. Conference on Functional Analysis and Optimization, Center of the Institute of Mathematics of the Polish Academy of Sciences, Bedlewo, Poland, September 17–21, 2007
144. Int. Conference on Inverse and Ill-Posed Problems of Mathematical Physics, dedicated to M. M. Lavrentev, Novosibirsk, Russia, August 20–25, 2007
145. Special Session at the SIAM-PDE Conference, Arizona, December 2007
146. AMS-NZM First Joint Meeting, Session on New Trends in Spectral Analysis and PDE, Wellington, New Zealand, Dec. 12–15, 2007
147. Workshop on PDE's, Rio de Janeiro, Brazil, September 1–7, 2007
148. Workshop on PDE's, University of Maringa, Maringa, Brazil, September 10–17, 2007

## 2008

149. MFO, Workshop on Optimal Control of Coupled PDE's, Oberwolfach, Germany, March 2–8, 2008
150. AMS Session on Harmonic Analysis and Fluids, Bloomington, April 5–8, 2008
151. 7th AIMS Conference on Dynamical Systems and Differential Equations, Arlington, TX, May 18–21, 2008
152. Int. Conference in Inverse Problems, Modeling and Simulations, Mugla, Turkey, May 28–30, 2008
153. Differential Equations and Topology, dedicated to L. S. Pontryagin, Moscow State Univ., June 17–22, 2008
154. Direct, Inverse and Control Problems in PDE's, Cortona, Italy, September 22–27, 2008
155. Workshop on Partial Differential Equations, organized by LNPC and UFRJ, Rio de Janeiro, Brazil, August 22–26, 2008

- 156. MTNS (Mathematical Networks and Systems) 2008, Workshop on Classical PDE Control Studies, Blacksburg, VA, July 28–August 1, 2008
- 157. AMS Central Sectional Meeting, Special Session on Optimization and Variational Analysis, Kalamazoo, Michigan, October 17–19, 2008
- 158. 47th IEEE-CDC Conference, Invited Session Distributed Parameter Systems, Cancun, Mexico, December 9–11, 2008

**2009**

- 159. International Conference on Nonlinear Parabolic Problems, in honor of H. Amann, Banach Center, Bedlewo, Poland, May 10–16, 2009
- 160. AMS Conference, Special Session on Nonlinear PDE's, San Francisco, May 25–27, 2009
- 161. 6th IMACS Intl. Conference on Nonlinear Evolution Equations and Wave Phenomena, Athens, Georgia, March 23–26, 2009
- 162. Review of AFOSR, Dynamics and Control Program, Washington, DC, July 15–18, 2009
- 163. 24th IFIP Conference, Invited Session on Stability and Error Analysis for Optimal Control Problems, Buenos Aires, Argentina, July 27–31, 2009
- 164. International Conference on Mathematical Control Theory, in honor of D. Russell. Chinese Academy of Sciences, Beijing, China, May 15–17, 2009
- 165. 7-th ISACS Congres, Invited Session on Nonlinear Evolutionary PDE's. Imperial College, London, July 13-17, 2009.
- 166. Summer School on Nonlinear Analysis, Federal University of Rio de Janeiro, August 2–8, 2009
- 167. SIAM PDE Conference, Miami, December 7-10, 2009
- 168. Conference in Honor of V. Lakshmikantham, Recent Advances in Mathematical Sciences and Applications, December 18-22, 2009, Mandurawada, India.

**2010**

- 169. AMS Annual Meeting, Jan. 10-15, 2010. Invited session *Nonlinear Hyperbolic Equations and Control Systems in Physics and Engineering*.
- 170. Winter School on Nonlinear Analysis and Control, , March 1-6, 2010, University of Maringa, Brazil.
- 171. Conference on Harmonic Analysis and PDE's, University of Nebraska, April 17-18, 2010.
- 172. 5th International Conference "Inverse Problems: Modeling and Simulation", Antalya, Turkey, May 24-29, 2010
- 173. 2010 American Control Conference (ACC) , June 30-July 2, 2010, Baltimore, Maryland, Invited Session "Estimation and Control of DPS ".
- 174. AIMS Conference on Dynamical Systems and Differential Equations, May 25-31, Dresden, Germany. Special Session Qualitative Behavior of Dissipative Dynamical Systems.
- 175. Conference on Evolution Equations, October 11-15, 2010, Schmitten-Frankfurt, Germany
- 176. Workshop on Dynamical Systems, September 18-22, 2010, Edinburgh, Scotland.
- 177. Conference on Semigroups, Evolution Equations, and Boundary Conditions, University of Taubigen, Germany, July 1-3, 2010

178. Conference on PDE-s , Semigroup Theory and Inverse Problems, University of Bologna, Italy September 1 - 4, 2010
179. 1065-th AMS Meeting, (Invited Session: Differential Equations and Applications), University of Richmond, November 6-7, 2010
180. 49-th IEEE-CDC Conference, (Invited Session on Nonlinear Control) , Atlanta, GA, Dec 15-17, 2010
181. Analysis Days , KFUPM, Dhahran, SA, Dec 21-23, 2010

## 2011

182. 2011 AMS Annual Meeting, Invited Session on Fluid Structure Interactions , New Orleans, Luisiana, Jan 6-9, 2011
183. INDAM Workshop "Modeling and Control of Nonlinear Evolutions". Sissa, Trieste, May 24-27, 2011.
184. SIAM Conference on Control, Special session Optimal Control and Applications, Baltimore, MD, July 25-27, 2011.
185. Summer School: Linear and Nonlinear Evolutions, (Principal Lecturer),Koc University, Istambul, Turkey, June 27-July 31, 2011.
186. PDE-Belem. X Workshop on Partial Differential Equations and Applications, August 29-September 01, 2011.
187. 25-th IFIP TC7 Conference on Modeling and Control, *Invited Session: Analysis and Control of Composite Systems* , Berlin, Germany, Sept 12-16, 2011.
188. 25-th IFIP TC7 Conference on Modeling and Control,*Invited Session:Evolution Problems and Optimal Control* Berlin, Germany, , Sept 12-16, 2011
189. Workshop on Control and Optimization of PDE's, University of Graz, Austria, Oct 10-14, 2011,
190. Evolution Equations and Randomness, Bad Harrenhalb, Germany, October 10-14, 2011
191. SIAM Conference on Analysis of PDE's. Invited Session " Dissipative Systems and Attractors", San Diego, Nov 14-17, 2011.
192. Workshop on Optimal Control of PDE;s, Invited speaker In honor of F. Troltsch. Nov 27-Dec 03, Klaffenbach, Germany, 2011.
193. International Conference on Numerical Analysis and Optimization Theory, Plenary speaker. KFUPM, Dhahran, SA, December 17-22, 2011.

## 2012

194. 2012 AMS Annual Meeting, Invited Session on Control of Biological Systems. Jan 4-7, 2012. Boston.
195. INDAM Workshop on Mathematical Models and Analytical problems in Special Materials. In honor of Mauro Fabrizio. Rome, April 16-20, 2012.
196. Conference on Variational Analysis and Applications, Erice, Sicily, May 14-22. 2012.
197. The Fifth International Conference on Inverse Problems, Golf Antalya, Turkey, May 24-29,2012.
198. AIMS Conference on Differential Equations and Dynamical Systems, *Invited Session on Mathematical Theory of Commprisable and Incompressibls Fluids*. Orlando, Fla, July 4-5, 2012
199. AIMS Conference on Differential Equations and Dynamical Systems, *Invited Session on Nonlinear Evolutions with Interfaces* . Orlando, Fla, July 1-3, 2012
200. ICNPAA 2012 Congress on Mathematical problems in Engineering. (Plenary speaker), Vienna, July 9-14,2012.

201. Workshop on Inverse Problems, University of Bologna, Bologna, Italy, July 16-20, 2012.
202. Conference on Applied Analysis and Mathematical Biology (Plenary speaker), University of Delaware , NE August 8-9, 2012.
203. AFOSR Review Meeting, Washington DC, Hyatt Regency, August 6-9, 2012.
204. XI Workshop on PDE's, LNCC and UFRJ, Rio de Janeiro, August 28-31, 2012.
205. Workshop: Model Reduction in Continuum Thermodynamics, *BIRS*, Canada, Sept 16-21, 2012.
206. Workshop on Aeroelasticity: Axial Air Flow. UCLA, November 20-21, 2012.
207. International Conference on the Theory, Methods and Applications of Nonlinear Equations, Kingsville, TX. Dec 17-21, 2012. (Plenary Speaker)

## 2013

208. The 8-IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena. Athens, GA March 25-28, 2013.
209. Workshop on Inverse Problems, Palazzo Cortona, Italy, June 17-21, 2013
210. Recent Advances in Partial Differential Equations and Applications , June 17-21, University of Milano, Italy, 2013 (Main Lecturer -series of 6 lectures).
211. Joint International Meeting of the **AMS and the Romanian Mathematical Society** in partnership with the Simion Stoilow Institute of Mathematics of the Romanian Academy, Alba Iulia, Romania, June 27-30, 2013
212. ANCNA Anatolian Communications in Nonlinear Analysis. Bolu, Turkey, July 30-6, 2013. (Main Speaker).
213. SIAM Conference on Control and Its Applications (CT13) July 8-10, 2013, in Town and Country Resort & Convention Center, San Diego, California, USA
214. ISAACS Congres, Special Session: Nonlinear Evolutions, Krakov, Poland, August 5-9, 2013.
215. AMS Mathematical Congress of the Americas, Guanajuato, August 5-9, 2013. Special Session "Control and Stabilization for Partial Differential Equations"
216. EQUADIFF 13, Prague, Czech Republic, August 26-30, 2013.
217. The 26th IFIP TC 7 Conference 2013 on System Modeling and Optimization Klagenfurt, Austria, September 9-13, 2013
218. - 1st IFAC Workshop CPDE - 25-27 September 2013, Institut Henri Poincaré Paris - France
219. XII Workshop on PDE's. LNCCP Petropolis, Rio de Janeiro, Brazil, Sept 10-14, 2013.
220. Semigroups of Operators: Theory and Applications, Institute of Mathematics, Polish Academy of Sciences, Oct 6-11, 2013.
221. SIAM -PDE Conference, Invited Session- Fluid Structure Interactions. Orlando, December 7-11, 2013.

## 2014

222. AMS Annual Meeting 2014- Invited SIAM Minisymposium on Recent Advances in Partial Differential Equations Modeling Physical Systems. Convention Center, Baltimore MD. January 15., 2014. -
223. AMS Conference, Invited Session on Nonlinear PDE's, , Knoxville , March 21-23, 2014.
224. Oberwolfach Workshop on Nonlinear Evolution Equations: Analysis and Numerics. March 16-March 22, 2014.
225. International Conference on Hyperbolic Problems, IMPA, Rio de Janeiro, July 28-August 1, 2014.

- 226. Workshop on Shape and Topology Optimization, LNCC MCT1, Petropolis-Rio de Janeiro, August 11-15, 2014.
- 227. Recent Trends in Nonlinear PDE's, NPDE 2014, Trieste, 28-30 May, 2014.
- 228. Conference on PDE, Novacella, Italy, May 29-June 1, 2014.
- 229. 10-th AIMS Conference on Dynamical Systems, Differential Equations. Special Invited Session: Nonlinear Evolutions PDE's and Interfaces. Madrid, Spain, July 7-July 11, 2014.
- 230. ICNPAA 2014 Congress, Narvik University, Norway, July 15-18, 2014.
- 231. Inverse Problems and Control Theory, Conference in Memory of Alfredo Lorenzi, University of Bologna, September 15-19, 2014
- 232. IWH Symposium in Heidelberg on Simulation and Optimization of Extreme Fluids, November 10-12, 2014, Heidelberg, Germany

## 2015

- 233. Shanks Workshop on Mathematical Aspects of Fluid Dynamics, Vanderbilt University, February 28-March 1, 2015.
- 234. Plenary Speaker (one of four) at SIAM-SEAS 2015. March 20-25, 2015. University of Alabama.
- 235. Plenary speaker (one of three) at the Ninth IMACS Conference on Nonlinear Evolution Equations and Wave Phenomena. Georgia Center, University of Georgia, April 01-04, 2015
- 236. 7-th International Conference on Dynamic Systems and Applications. Atlanta, May 27-30, 2015.
- 237. From Open to Closed Loop Control , Mariatrost, Austria, June 22-26, 2015
- 238. New Advances in PDE's and Inverse Problems and Control Theory, Parma, July 6-10, 2015.
- 239. Invited Session at the IFIP TC7 Conference, Sophie Antipolis, FR, June 29-July 3, 2015
- 240. Conference on Bio-Fluids, University of Warsaw and Banach Center, April 27-29, 2015
- 241. Mathematical Fluid Mechanics:Old Problems, New Trends. Banach Center, Bedlewo, 30 August-5 September, 2015
- 242. XiV PDE Workshop-Rio. Workshop on PDE's. September 21-15, 2105. Petropolois, LNCC , Rio de Janeiro, Brasil.
- 243. SIAM-PDE Conference, December 7-11,2015, Scottsdale, Arizona,

## 2016

- 244. IMA (Institute of Mathematics and Applications) Workshop Computational Methods for Control of Infinite-Dimensional Systems , March 14-18,2016, University of Minnesota in Minneapolis
- 245. AMS Sectional Meeting, Stony Brook, March 18-19, 2016, Invited one hour address
- 246. International Conference on Evolution Equations, May 16-May 20, 2016, University of Vanderbilt, Nashville.
- 247. Conference on Dynamical Systems and Applications, Institute of Mathematics, Lodz, June 16-18, 2016
- 248. OCERTO 2016- Optimal Control for Evolutionary PDE's, Cortona, June 20-24, 2016.
- 249. Conference on "Nonlinear PDE's " in Applied Mathematics, Ismir Institute of Technology, Turkey, August 28-30, 2016.
- 250. Oberwolfach Seminar: Mathematics of Fluid-Flow Structure Interaction Problems, Oberwolfach, Germany, November 20-26, 2016. One of the 4 plenary speakers.



## 2017

251. 2017 AMS Annual Meeting, Atlanta, January 4-7, 2017. Invited session .
252. 2017 Conference on Automatica, June 18-21, Cracow, Poland. One of four plenary speakers.
253. Banff International Research Station, Control: New Trends in Infinite Dimensions, Banff, July 16-21. 2017. Organizer.
254. GPCO 2017-7-th German-Polish Conference on Optimization, Bedlewo, August 27-September 1m 2017, One of seven plenary speakers.
255. Workshop on Nonlinear PDE's, Ismir Institute of technology, August 8-11, 2017.
256. AMS Conference, Sept. 23-24, 2017, Orlando 2017. Invited Session.
257. Workshop on Dynamics, Control and Numerics for Fractional PDE's, Hilton, San Juan, Puerto Rico, October 23-25, 2017. Keynote lecture [one of seven]
258. SIAM PDE Conference, Baltimore, December 9-11, 2017. Invited session.
259. Conference on Recent Advances in Mathematical Sciences and Applications (RAMSA-17), at GVP College of Engineering, Visakhapatnam, India.19th to 22nd December, 2017 .One of the Three Plenary Speakers.

## 2018

260. Paths in Mathematical Control Theory, Torino, March 25-27, 2018. One of the Three Main Lecturers.
261. The Third International Conference on the Dynamics of Differential Equations-Fundamentals and Developments, In Memory of Professor Jack. K. Hale, Hiroshima, March 14-March 18, 2018. One of 40 min long lectures.
262. Emerging Trends in Applied Mathematics and Mechanics, Jagiellonian University, Krakow, Poland June 18-22, 2018. One of the four plenary speakers.
263. SMACS 2018-Special Materials and Complex Systems. Palazzo Feltrinelli, Garganano, Italy, June 18-22, 2018.
264. AMS Meeting -invited special session Nonsmooth Optimization and Applications, Portland State University, May 14-18, 2018.
265. Invited session on Control of PDE's, IFIP 28 Conference on Modeling and Optimization. Qualitative analysis and control theoretic properties of evolutionary partial differential equations. Essen Germany, July 24-27, 2018.
266. Semigroups of Operators, Theory and Applications -SOTA. Banach Center, Kazimierz Dolny, September 9-October 5, 2018.
267. Plenary speaker Dynamics of Dissipative PDE's Workshop, University of Surrey, Sept 10-14, 2018.
268. XVII Workshop on PDE's [invited 40 min long talk], LNCC, Petropolis-Rio de Janeiro, Brasil, September 11-14, 2018.
269. Invited speaker Oberwolfach Workshop: Numerical Analysis for Non-Smooth PDE Constrained Optimal Control Problems, Dec 16-Dec 22, 2018, Oberwolfach, Germany.
270. Workshop on Dynamics, Control and Numerics for Fractional PDE's, San Juan, Puerto Rico, Dec 4-8. 2018. Keynote lecture [one of six]

## 2019

271. Invited talk " Flow Structure interactions", University of Vanderbilt, Department of Mathematics. February 28

- 272. AMS Invited Session on Control of Coupled PDE's systems, Auburn University, March 16-17, 2019.
- 273. Workshop on Fluid Structure Interactions, Milano, Italy March 19-22
- 274. Workshop on Infinite Dimensional Control Theory, Rice University, April 6-7, Houston
- 275. PDE Workshop in honor of Prof. Racke, University of Constant, April 9-11, 2019.
- 276. Karen Ames Memorial Lecture, University of Alabama, Huntsville, April 19.
- 277. Conference on Evolution Equations, May 6-10, Bad Herrenbald, Germany.
- 278. Workshop on Control Theory of PDE systems, NCState, Raleigh, May 13-15, 2019.
- 279. IFAC CPDE Conference, Oaxaca, Mexico, May 20-24
- 280. Romanian Congres of Mathematics, July 28-August 3
- 281. Conference on Differential Equations and Applications DEA -Krakov, Poland, September 16-20, 2019
- 282. Conference in Honor of Matthias Hieber, CNR Center, Luminy Oct 28-Nov 1, 2019, France.

### **X(c) Colloquium talks**

- Scuola Normale Superiore, Analysis Department, Pisa, Italy, June 1984
- University of Bologna, Mathematics Department, Bologna, Italy, June 1984
- Scuola Normale Superiore, Pisa, Italy, June 15–July 30, 1985
- International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria, July 1986
- Scuola Normale Superiore, Pisa, Italy, June 10–30, 1986
- University of Paris IX, Mathematics Department, Paris, France, June 1987
- Carnegie Mellon University, Mathematics Department, Pittsburgh, PA, Jan. 1987
- University of Zürich, Mathematics Department, Zürich, Switzerland, July 9–15, 1987
- Scuola Normale Superiore, Pisa, Italy, July 15–30, 1987
- University of Maryland, Mathematics Department, College Park, MD, Oct. 1988
- Virginia Polytechnic Institute, Mathematics Department, March 1988
- University of Cincinnati, Mathematics Department, May 1988
- Georgetown University, Mathematics Department, Nov. 1988
- Scuola Normale Superiore, Pisa, Italy, July 1988
- Cornell University, Seminar on Microlocal Analysis, MIS, Nov. 1988
- Scuola Normale Superiore, Pisa, July 1989
- University of Bologna, Mathematics Department, Bologna, Italy, July 1990
- University of Kansas, Department of Mathematics, Lawrence, KS, April 1991
- University of Bologna, Department of Mathematics, Bologna, Italy, June 1991
- Scuola Normale Superiore, Pisa, July 1991
- Virginia Polytechnic Institute, ICIAM Center, Blacksburg, VA, Nov. 1991

University of Kansas, Department of Mathematics, Lawrence, KS, Dec. 1991  
IIASA Institute, series of four lectures, Laxenburg, Austria, Aug. 1991  
University of Maryland, Department of Mathematics, College Park, MD, April 17, 1992  
Scuola Normale Superiore, Pisa, Italy, July 1992  
University of Bologna, Department of Mathematics, Bologna, Italy, June 1992  
University of Trento, Department of Mathematics, series of five lectures, Italy, Oct. 1992  
University of Pavia, Department of Mathematics, Pavia, Italy, Nov. 26, 1992  
University of Torino, Department of Applied Mathematics, Italy, July 1992  
University of L'Aquila, Department of Mathematics, Italy, Dec. 5, 1992  
University of Trento, Department of Mathematics, Italy, Jan. 1993  
University of Torino, Department of Mathematics, Torino, Italy, July 3, 1993  
University of Bologna, Department of Mathematics, series of six lectures, Bologna, Italy, June 1993  
Scuola Normale Superiore, Pisa, Italy, July 20–25, 1993  
University of Jyväskylä, Department of Mathematics, series of 10 lectures, Finland Aug. 15–28, 1993  
Polish Academy of Sciences, Institute of Fundamental Problems in Technology, Warsaw, Aug. 5, 1993  
Wright State University, Department of Mathematics, April 1994  
RPI, Department of Mathematical Sciences, Troy, NY, May 2, 1994  
CNR, IAC, Rome, Italy, June 1994  
Scuola Normale Superiore, series of lectures, Pisa, Italy, July 1995  
Wichita State University, Department of Mathematical Sciences, April, 1996  
Scuola Normale Superiore, series of lectures, Pisa, Italy, June–July 1997  
University of Nebraska, Mathematics Department, Lincoln, NE, Oct. 1997  
Seoul National University, Mathematics Department, Korea, June 1998  
Scuola Normale Superiore, July 1998  
Texas Tech, University, Mathematics Department, Lubbock, TX March 2000  
Univ. of Firenze, Firenze, Italy, May 2002  
Univ. of Brescia, Brescia, Italy, May 2002  
Scuola Normale Superiore, Pisa, Italy, Feb–June 2002  
Univ. of Maryland, October 25, 2003  
Wayne State University, Detroit, MI, March 7, 2005  
University of Nebraska, Lincoln, NE, March 2007  
Michigan State University, MI, April 2007  
UCLA, Los Angeles, October 2007

- Scuola Normale Superiore, March 2008
- University of Nebraska, March 2009
- University of Zurich, Department of Mathematics, Zurich, Switzerland. January, 2010.
- Tata Institute, School of Mathematics, Bangalore, India, January 2010.
- Kent State University, February 2010.
- University of Prague, Department of Mathematics, Prague , Czech Republic. 2010.
- University of Berlin, Department of Mathematics, Germany, 2010
- University of Nebraska, Lincoln, 2010
- University of Warsaw, Poland, May-June, 2010
- Weierstrass Institute, Berlin, Germany, December 2010.
- Eli Cartan Institute, L' Universite de Nancy, Nancy, France December 2009.
- L'Universite de Nice and L'Ecole de Mines, Sophia Antipolis, Nice, France, 2010
- University of Graz , Austria, 2010.
- Institute of Mathematics, Polish Academy of Sciences, Warsaw, June 2010.
- King Fahd University (KFUPM), Dhahran, KSA, December, 2011
- Rutgers University, New Brunswick, NJ, March 2011
- University of Memphis, Department of Mathematics, April 2012.
- University of Maringa (UEM) and UFRJ (Univ. Federal Rio de Janeiro) , Brazil, August-September 2012.
- University of California, UCLA, November , 2012
- University of Warsaw, Department of Mathematics, October 2012.
- University of Southern California, USC, Los Angeles, CA Fall 2013.
- University of Maryland, College Park, MD, April 30, 2014.
- University of Kansas, December , December 2013.
- Institute of Mathematics, Polish Academy of Sciences, December 2014.
- Department of Mathematics, University of Parma, Italy, July 2015.
- Institute of Mathematics, Polish Academy of Sciences, December 2015.
- Department of Mathematics, University of Maringa, Brasil, May 2016.
- Department of Mathematical Sciences, Florida Institute of Technology, November 2017.
- Department of Applied Mathematics, Politecnico di Milano, March 28, 2018.
- Department of Mathematics, University of Nebraska, Lincoln, Oct 10-12, 2018
- Department of Mathematics, Vanderbilt University, Nashville, February 28, 2019.
- Department of Mathematics, University of Alabama, Huntsville, Dr. Karen Ames Memorial Lecture, April 18, 2019.