

Curriculum Vitae of Benedetto Piccoli

Associate Provost for Research

Distinguished Professor

Joseph and Loretta Lopez Chair Professor of Mathematics

Department of Mathematical Sciences and Center for Computational and Integrative Biology,

Affiliated Scholar of the Community Leadership Center,

Rutgers University - Camden, 227 Penn Street, Camden, NJ 08102

Tel: (856) 225-6356, Email: piccoli@camden.rutgers.edu, Webpage: <http://piccoli.rutgers.edu>

Education

- **PhD in Mathematics**, SISSA-ISAS (Triest, Italy), October 1994, Supervisor: Prof. Alberto Bressan. Title: A generic classification of time optimal planar stabilizing feedbacks.
- **Master in Mathematics**, SISSA-ISAS (Triest, Italy), Oct. 1993, 30 over 30 cum laude.
- **Laurea Degree in Mathematics**, University of Padua, July 12th 1991, 110 over 110 cum laude.

Academic Positions

- **Associate Provost for Research**, Rutgers University - Camden 1/16-ongoing.
- **Distinguished Professor**, Rutgers University - Camden 7/15-ongoing.
- **Joseph and Loretta Lopez Chair Professor of Mathematics**, Rutgers University - Camden 9/09-ongoing.
- **Director**, Center for Computational and Integrative Biology, Rutgers University - Camden, 10/14 to 12/15.
- **Graduate Program Director**, Center for Computational and Integrative Biology, Rutgers University - Camden, 10/11 to 09/14.
- **Full Professor**, Rutgers University - Camden 09/09 to 06/15.
- **Research Director**, IAC – CNR 12/01 to 09/10.
- **Associate Professor**, University of Salerno 11/98 to 12/01.
- **Researcher**, SISSA 12/94 to 10/98 (tenured since 12/97).
- **Visiting positions**, Rutgers University (Sept 95- March 96), Université de Paris Sud, Orsay (May 2000, July 2002).

Prizes and Honors

- **American Mathematical Society Fellow**, initial class of fellows 2012.
- **Invited Speaker** (Plenary), International Congress of Industrial and Applied Mathematics 2011, Vancouver.
- **Fubini Prize 2009** given by Istituto Superiore "Mario Boella", in collaboration with Polymath of Torino and the Association "Subalpina Mathesis".

Scientific Activity

Research Interests:

Networks: traffic flow on networks : theory, numerics and applications; ode and pde models, multiscale models, models coupling, vehicular traffic, mobile sensors data, supply chains, data networks, irrigation channels, crowd dynamics, flocks dynamics.

Partial Differential Equations: hyperbolic systems of conservation laws: Cauchy problem, nonclassical shocks; hyperbolic–elliptic systems, elastodynamics, pde methods for signal analysis.

Control Systems: controlled systems, differential inclusions, discontinuous ODEs, optimal control, optimal syntheses, hybrid systems, quantized systems, cooperative controls, stochastic control and algorithms, mechanical, automotive and robotics applications, sparse control to consensus.

Systems Biology : optimal control for bio-medical and bio-mechanical systems: swing and ski models, animal groups, HIV infections, cancer immuno-therapies; developmental biology, biological rhythms.

Mathematical finance: Public Debt management, interest rate models.

Research Projects

- **Member** of European TMR Network “Hyperbolic systems of conservation laws”, SISSA group, 1996-2000.
- **Member** of European TMR Network “Nonlinear control systems”, Italian group, 1998-2002.
- **Coordinator** project Ex-60% 2000 grant for DIIMA, University of Salerno.
- **Local Coordinator** University of Salerno National Italian Project Cofin2000, “Hyperbolic systems”.
- **Local Coordinator** University of Salerno CNR Project Agenzia 2000 “Hybrid Optimization: optimal control for interconnected continuous and discrete dynamics”.
- **Member** of SISSA group for National Italian Project Cofin2001, “Feedback and optimal control”.
- **Local Coordinator** at IAC–CNR for Control Training Site, Multipartner Marie Curie Training Site, 2002-2006. www.supelec.fr/lss/CTS
- **Member** of University of Rome “Tor Vergata” group for National Italian Project Cofin2002, “Nonlinear hyperbolic and parabolic equations”.

- **Member** of European Research Training Network Programme: HYperbolic and Kinetic Equations (HYKE), 2002-2005.
www.hyke.org/index.php
- **Coordinator** (with M. Bernaschi) of research project "Public Debt Management" with the Italian Ministry of the Economy and Finance, 2002-.
- **Coordinator** of GNAMPA research project "Distributional properties of stochastic control processes and their applications to portfolio optimization", 2003.
- **Member** of FIRB 2003 project "La gestione del debito pubblico" ("Public debt management").
- **Local responsible** at IAC for ICT italian project 2003 "Goethe".
- **Coordinator** of GNAMPA research project "Optimal strategies for the public debt management", 2004.
- **Coordinator** of INDAM research project "Control Theory and Numerics", 2004.
- **Local Coordinator** at IAC-CNR for Network of Excellence project HYCON "Hybrid control: taming heterogeneity and complexity of networked embedded systems", 2004-8. www.ist-hycon.org
- **Steering Committee** member of European Science Foundation project AMaMeF "Advanced Mathematical Methods in Finance", 2005-2010.
http://www.iac.rm.cnr.it/amamef/
- **Coordinator** of INDAM research project "Traffic flows and optimization on complex networks", 2005-2006.
- **Local Coordinator** of FIRB 2005 research project CASHMA "Context Aware Security by Hierarchical Multilevel Architectures".
- **Responsible** of Agreement between Centro di Ricerca in Matematica Pura Applicata dell'Universita degli Studi di Salerno (C.R.M.P.A.) and Istituto per le Applicazioni del Calcolo "Mauro Picone" (IAC), starting 2007.
- **Participant** of Agreement between ATAC S.p.A. and Istituto per le Applicazioni del Calcolo "Mauro Picone" (IAC), starting October 2007.
- **Member** IAC, Italian Ministry Project PRIN 2007 on Hyperbolic systems of conservation laws.
- **Project Coordinator** for Galileo Project 2008/09 of Italy-France University entitled NUSMAIN (new mathematical tools for Infomobility).
- **Project Coordinator** for IAC-Selex SI collaboration on "Stochastic algorithms for simulation of radar signals", 2009/10.

- **Co-PI** for NSF STEP project entitled "Q-STEP Community of Quantitative Scientists", 2009-2014.
- **Principal Investigator** for Rutgers Research Council Grant "Advanced modeling for pedestrian motions: Experiments on Camden campus, using a multi-scale approach and psychological insight", 2011-12.
- **Node coordinator** for NSF Research Network "KI-Net": kinetic description of emerging challenges in multiscale problems of natural sciences, 2012-17.
- **Co-PI** for Rutgers Faculty Research Grant "EFGR Signaling Diversification: An Interdisciplinary Research Approach", 2012-13.
- **Co-Investigator** for NIH R15 project "AREA: Mechanisms Underlying EGFR Signaling Distribution in Epithelial Tissues", 2013-16.
- **Principal Investigator** for NSF REU project "REU site: Computational Biology Summer Program at Rutgers-Camden", 2013-16.
- **Principal Investigator** for Rutgers Research Council Grant "Octocopter to study birds flight formations", 2014/15.
- **Principal Investigator** for NSF CPS project "CPS: Synergy: Collaboration Research: Control of Vehicular Traffic Flow Via Low Density Autonomous Vehicles" in collaboration with University of Illinois at Urbana-Champaign, Temple University and University of Arizona (total budget 1M), 2015-18.
- **Member** of French INRIA associate team project ORESTE.
- **Principal Investigator** Rutgers Camden – Sanofi research project "Optimization and simulation approaches for Systems Pharmacology in the Pharmaceutical Industry", 2015-16.
- **Principal Investigator** for NSF REU project "REU site: Computational Biology Summer Program at Rutgers-Camden", 2016-19.
- **co-PI** for 2017 Rutgers Grant Awards in Big Data Analytics Crowd-Centric Security Big Data Analytics and Risk Management: an Interdisciplinary Academic-Industry Consortium, sponsored by Rutgers ORED, RU-N Research Office, Office of Sr. VP & CIO, and RBHS.
- **co-PI** for 2018 Rutgers ORED Interdisciplinary Research Group Grant "Human Centered Design with Communities for Individual and Population Health" (200K total funding for Walter Rand Institute at Rutgers-Camden joint with Rutgers-New Brunswick School of Communication).

Organisation of Conferences.

- “Hyperbolic systems of conservation laws”, SISSA May 13–15 1998.
- ”Control theory and applications”, Grado (Italy) September 26–28 1998.
- Invited thematic double session ”Optimal Control I & II” in 37th IEEE “Conference on Decision and Control” 1998, Tampa, Florida.
- Invited thematic double session ”Optimal Control I & II”, with H.J. Sussmann, in 38th IEEE “Conference on Decision and Control” 1999, Phoenix, Arizona.
- “Workshop on Robotics and Mathematical Control Theory”, SISSA, Trieste, June 25–27 2000,
- SISSA Mathematics Days on “Control Theory and Conservation Laws”, SISSA, Trieste, June 26–28 2000.
- Invited thematic session ”Optimal Control and Applications”, in 39th IEEE “Conference on Decision and Control” 2000, Sidney, Australia.
- Invited session on Optimal control at “European Control Conference” 2001 (Porto, Portugal).
- ”Picone Lecture”, IAC, Rome, 6th December 2002.
- Workshop on: ”Feedback control and optimal control” Siena, Italy, July 28-31, 2003.
- Invited thematic double session ”New trends in Geometric and Optimal Control I & II”, with U. Boscain, in 42th IEEE “Conference on Decision and Control” 2003, Maui, Hawaii.
- Workshop on ”Advanced Mathematical Methods for Finance” October 28-29 2004, Munich.
- Invited thematic session ”Computational Biology”, with F. Castiglione, in 43th IEEE “Conference on Decision and Control” 2004, Paradise Island, Bahamas.
- Workshop ”Control Systems: Theory, Numerics and Applications”, Rome, March 30 April 1, 2005.
- Invited thematic session on “Geometric methods in optimal control” at 22nd IFIP Conference on System Modeling and Optimization Turin, Italy, July 18-22, 2005.
- XXV International Seminar on ”Stability Problems for Stochastic Models”, September 2005, Maiori, Italy.
- Invited thematic session ”Stochastic and Randomized Algorithms for Optimization and Control”, with F. Dabbene, in 43th IEEE “Conference on Decision and Control” 2005, Sevilla.

- INDAM Workshop on "Geometric Control and Nonsmooth Analysis", Rome, 5-9 June 2006.
- Launching meeting of "Networks and Heterogeneous Media", Maiori (SA), Italy, 21-23 June, 2006.
- Workshop Hybrid Systems: Computation and Control, Program Committee, Pisa April 3-5 2007.
- Workshop "Modelling and Control of Physical Networks", Centro di Ricerca Matematica Ennio De Giorgi, Scuola Normale Superiore, Pisa 06 April 2007.
- Workshop "Mathematical tools for car traffic control", Istituto Nazionale di Alta Matematica "F. Severi", Rome, 19 April 2007.
- Technical Program Committee of Robocomm 2007, Athens, Greece, October 2007.
- Workshop "Mathematical Models of Traffic Flow", October 28 - November 1 2007, CIRM, Marseille-Luminy-France.
- Workshop "Irrigation Channels and Related Topics", Maiori (SA), Italy, October 2-4, 2008.
- Technical Program Committee of Robocomm 2009.
- Director for CIME course "Modelling and Optimisation of Flows on Networks", June 15 - 19 2009, Cetraro (CS), Italy.
- Scientific Program Committee for Conference of the European Research Group Project Control of Partial Differential Equations CIRM Luminy (FRANCE) January 25-29 2010.
- Organizing committee of "Hyperbolic Systems and Control of Networks", IHP Paris 18-20 October 2010.
- Member of Panel 7: Mathematical Programming and Industrial Applications-2 for ICIAM 2011.
- Organizing committee of "Mathematics of Traffic Flow Modeling, Estimation and Control", IPAM Workshop, UCLA, December 7 - 9, 2011.
- Organizing committee of "Traffic Modeling and Management: Trends and Perspectives", INRIA, Sophia Antipolis, March 20-22, 2013.
- International Program Committee and Organizer of Invited Session "Modeling and Control of Collective Dynamics" (with M. Caponigro and R. Ghezzi), 1st IFAC "Workshop on Control of System Modelled by Partial Differential Equations, Paris, France, September 25-27, 2013.
- International Program Committee of the 13th European Control Conference, Strasbourg, France, June 24-27 2014.

- Organizing Committee of Ki-NET Conference "Modeling and Control in Social Dynamics", Rutgers University - Camden, October 6–9 2014.
- International Program Committee of the 4th, International Conference on Operations Research and Enterprise Systems - ICORES, Lison, Portugal, January 10–12, 2015.
- Organizing Committee of the IPAM (UCLA) Workshop "Mathematical Foundations of Traffic", Los Angeles, CA, September 28 – October 2, 2015.
- International Program Committee (IPC) of the IFAC workshop on Control of Systems Governed by Partial Differential Equations 2016 (CPDE16), Bertinoro, Italy, 13–15 June 2016.
- Scientific Committee (IPC) of "Nonlinear Partial Differential Equations and Applications", a conference in the honor of Jean-Michel Coron for his 60th birthday, Paris, Institut Henri Poincare, June 20–24 2016.
- Special session organizer, "Traffic Flow Models and Their Application in Traffic Engineering", with Benjamin Seibold, The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL, July 1–5, 2016.
- Program Committee member for the 55th IEEE Conference on Decision and Control 2016, Las Vegas, NV, December 12–14 2016.
- Organizing Committee of ICERM Topical Workshop "Pedestrian Dynamics: Modeling, Validation and Calibration", Brown University, August 21–25 2017.
- Organizing Committee of CIRM conference "Crowds: models and control", CIRM Marseille June 3–7 2019.
- International Program Committee of the 2019 IFAC Conference on Control of PDEs jointly and the Workshop on Control of Distributed Parameter Systems in beautiful Oaxaca, Mexico, May 20–24 2019.

Popularization activity

- Popularization article (in italian) on mathematical methods for the management of Public Debt: Sapere n. 4, Edizioni Dedalo, July/August 2004.
- Popularization article (in italian) on Pisot number and manipulation problems in robotics: A. Marigo and B. Piccoli, Numeri di Pisot, Postage Stamp e Robotica, Lettera Matematica Pristem 68 (2008), 24-30.
- Popularization article: G. Bretti, R. Natalini and B. Piccoli, Fluid dynamic approach to traffic flow problems, ERCIM News 68, special theme "Traffic Planning and Logistics", Jan. 2007, p. 30.
- Member of the group MADDMATHS, popularization of applied mathematics research 2009-2012, <http://maddmath.simai.eu/>

- Popularization article (in italian) on traffic flow on networks: Ciro D'Apice, Rossana Manzo e Benedetto Piccoli, I modelli fluidodinamici di flussi di reti e loro ottimizzazione, Lettera Matematica Pristem 76 (2010), 28-40.
- Popularization article: Simulation of stochastic radar signals, in European success stories in industrial mathematics, T. Lery et al eds., Springer Verlag, Berlin Heidelberg, 2012.

Editorial activity

- **Editor in Chief** of "Networks and Heterogeneous Media", 2006-ongoing.
- **Corresponding Editor** of ESAIM: Control, Optimisation and Calculus of Variations, 2003-ongoing.
- **Associate Editor** of Mathematical Control and Related Fields, 2017-ongoing.
- **Editorial Advisory Board** of Open Mathematics, 2014-16.
- **Associate Editor** of Journal of Dynamical and Control Systems, 2003-2014.
- **Associate Editor** of Discrete and Continuous Dynamical Systems – Series B, 2003-2014.
- **Associate Editor** of SIAM Journal on Control and Optimization, 2005-2014.
- **Editor** of electronic Proceedings of "Control Systems: Theory, Numerics and Applications", Rome March 2005, pos.sissa.it
- **Editor** for SIAM Journal on Control and Optimization Special Issue on "Control and Optimization in Cooperative Networks" with F. Bullo and J. Cortes.

Referee activity

- **Referee** for: Transactions of the AMS, Annales Inst. Henri Poincaré, Proceedings of the Royal Society of Edinburgh, Archive for Rational Mechanics and Analysis, SIAM J. on Control and Optimization, SIAM J. on Mathematical Analysis, SIAM J. on Scientific Computing, SIAM J. on Applied Mathematics, Journal of Differential Equations, ESAIM: Control and Calculus of Variations, International Journal of Control, Mathematics of Control Signal and Systems, Communications in Mathematical Sciences, Journal of the Franklin Institute, Ricerche di Matematica, Nonlinear Differential Equations and Applications, Journal of Dynamical and Control Systems, International Journal of Control, IEEE Transaction on Automatic Control, Automatica, Journal of European Mathematical Society, Discrete and Continuous Dynamical Systems (Series A and B), International Journal of Mathematics and Mathematical Sciences, Nonlinearity, Physica A, Inverse Problems, Applied Mathematics Letters, Journal of Mathematical Analysis and Applications, Systems and Control Letters, Transportation Research Part B, The Lancet Diabetes & Endocrinology, Multiscale Models and Simulations, AMS Featured review, ACC 98-, IEEE CDC 99-, HYP2000-, ECC 2001-, HSCC 2002-.

- **Books review:** “Nonsmooth Analysis and Control” by Clarke, Ledyaev, Stern and Wolenski for IEEE Transactions on Automatic Control; “Optimal Control” by Vinter for Automatica.
- **Member of Area Panel 01 ”Mathematical and Information Sciences”** (6 members) for CIVR, Evaluation (in 2005) of Italian research 2001-2003, www.civr.it
- **Project Reviewer.** Ministry Expert for Italian Ministry of University and Research and for Italian Ministry of Economic Development.
Other: Evaluator for NSF Projects. ”Fondazione per la Ricerca e l’Innovazione”, University of Florence, 2007. Fondecyt (Chile) projects 2009. MITACS projects (Canada) 2010. Swiss Joint Research Programme (ISJRP) 2010. EUROCORES theme Proposal, European Science Foundation 2010. European Research Council, ”ERC Advanced Grant 3rd Call - 2010”. Netherlands Organisation for Scientific Research (NWO), 2011. Agence Nationale de la Recherche (France), Project Blanc, 2012. PRIN projects MIUR, Italy, 2012. INRIA research project-team, France, 2012. Italian Evaluation of Research Quality exercise (VQR 2004-2010). NFG of Austrian Science Fund, 2012. European Science Foundation and FCT Portugal 2014. Israel Science Foundation 2014. ERC Synergy 2018.

Students

- **Supervisor** for Mathematics Diploma thesis of Yosief Wondmagegne, International Center for Theoretical Physics (Trieste), August 1997.
- **Supervisor** Post-Doc student Paolo Baiti, University of Padua, “Nonclassical shocks in conservation laws” (1997/98 and 98/99).
- **Supervisor** Post-Doc student Jean–Marc Mercier, SISSA-ISAS, “Phase transitions and Cauchy problem for nonlinear elastodynamics”, (1997/98 and 1999/2000).
- **Supervisor** for PhD thesis of Ugo Boscain, SISSA-ISAS, “Morse properties and extremal synthesis for minimum time in 2-D”, October 2000.
- **Supervisor** for PhD thesis of Mauro Garavello, SISSA-ISAS, ”Control of Distributed and Hybrid Systems”, October 2004.
- **Scientific responsible** for Isaac Corro Ramos, CTS PhD student, Jan-June 2004.
- **Scientific responsible** for Katarzyna Zadarnowska, CTS PhD student, July 2004 - Jan 2005.
- **Scientific responsible** for Ewa Girejko, CTS PhD student, Sept 2004 - Mar 2005.
- **Supervisor** for PhD thesis of Antonio Cappuccio, University of Rome La Sapienza, ”Modelling and control of immunological systems”, October 2006.
- **Supervisor** for PhD thesis of Rosanna Manzo, University of Salerno, ”Fluid Dynamic Models for Telecommunication Networks and Supply Chains”, March 2007.

- **Co-Supervisor** (with Ciro D'Apice) for PhD thesis of Luigi Rarita, University of Salerno, "Control problems for flows on networks", March 2008.
- **Co-Supervisor** (with Ciro D'Apice) for PhD thesis of Nunzia Cascone, University of Salerno, "Modelling and Optimization of Traffic Flows on Networks", March 2008.
- **Supervisor** Post-Doc student Andrea Tosin, IAC-CNR, 2007/8, on modelling of pedestrian flows with time-evolving measures.
- **Supervisor** Post-Doc student Paolo Mason, IAC-CNR, 2007/8, on optimization of networks for stochastic signals detection.
- **Co-Supervisor** (with Ciro D'Apice) for PhD thesis of Alfredo Cutolo, University of Salerno, "SPA.DA Modeler, a tool for the modellization of spatial data: the visual environment", March 2009.
- **Supervisor** Post-Doc student Luca Greco, IAC-CNR, 2007/9, on optimal deployment of sensors over networks.
- **Supervisor** Post-Doc student Paolo Frasca, Crmpa and IAC-CNR, 2008/10, on intelligent groups and radar signals.
- **Supervisor** Post-Doc student Emiliano Cristiani, Cemsac and IAC-CNR, 2008/10, on vehicular traffic and pedestrian modelling.
- **Co-Supervisor** (with Ciro D'Apice) for PhD thesis of R. Frattaruolo, University of Salerno, Italy, "Optimization methods for a supply chain ode-pde model", April 2010.
- **Co-Supervisor** (with Antonio Bicchi) of PhD student Nevio Dubbini, University of Pisa, Italy, "Left invertibility of I/O quantized systems: IFS, number theory, cryptography, algorithms", June 2010.
- **Co-Supervisor** (with Corrado Lattanzio) of PhD student Amelio Maurizi, University of L'Aquila, Italy, "Moving Bottlenecks in Car Traffic Flow: Modeling, Analysis and Simulations", June 2010.
- **Supervisor** of Master Thesis in Applied Mathematics of Anupam Simlot, "Pontryagin Minimum Principle and Application of Optimal Control to Cancer Immunotherapy", Rutgers-Camden, Spring 2011.
- **Co-Supervisor** (with Mary Bravo) of Emily Leibowitz, Summer Undergraduate Research Grant at Rutgers - Camden, Summer 2011.
- **Supervisor** of Postdoctoral Associate Marco Caponigro, Rutgers - Camden, AY 2011-12.
- **Supervisor** of Postdoctoral Associate Roberta Ghezzi, Rutgers - Camden, AY 2011-12.
- **Supervisor** of Visiting Master Student Benjamin Heymann (Ecole Polytechnique, Paris), Rutgers - Camden, Spring/Summer 2012.

- **Supervisor** of Visiting Master Student Matthieu Peltier (Ecole Polytechnique, Paris), Rutgers - Camden, Spring/Summer 2012.
- **Co-Supervisor** (with Mary Bravo) of Conor Knight, Summer Undergraduate Research Grant at Rutgers - Camden, Summer 2012.
- **Supervisor** of Visiting Master Student Pierre Camilleri (Ecole Polytechnique, Paris), Rutgers - Camden, Spring/Summer 2013.
- **Supervisor** of Visiting Master Student Thomas Monge Cadet (Ecole Polytechnique, Paris), Rutgers - Camden, Spring/Summer 2013.
- **Supervisor** of Visiting Master Student Nouridine Ait Kaddour (University of Marseille), Rutgers - Camden, Spring/Summer 2013.
- **Supervisor** of Visiting Master Student Maxime Agostini (University of Marseille), Rutgers - Camden, Spring/Summer 2013.
- **Supervisor** of REU students: Bryan Gachomo, Julianne Thornton and Tevin Wilson, (NSF sponsored) Summer Research Experience for Undergraduate at Rutgers - Camden, Summer 2013.
- **Co-Supervisor** (with Nir Yakoby, Biology RUC) for the PhD Thesis of Matthew Niepielko, CCIB at Rutgers University - Camden, "Changes in BMP and EGFR signaling components underlie the evolution of Drosophila eggshell morphologies", May 2014.
- **Supervisor** of CCIB PhD Student Nastassia Pouradier Duteil, Rutgers University - Camden, expected Spring 2017.
- **Supervisor** of Visiting Master Student Man Yu Wong (Ecole Polytechnique, Paris), Rutgers - Camden, Spring/Summer 2014.
- **Supervisor** of Visiting Master Student Sebastien Ohanian (University of Marseille), Rutgers - Camden, Summer 2014.
- **Supervisor** of Visiting Master Student Quentin Watel (University of Marseille), Rutgers - Camden, Summer 2014.
- **Supervisor** of REU students: Brain Cheung and Umair Tariq, (NSF sponsored) Summer Research Experience for Undergraduate at Rutgers - Camden, Summer 2014.
- **Supervisor** of CCIB Master Student Aylin Aydogdu, Rutgers University - Camden, thesis defended May 2016.
- **Supervisor** of CCIB PhD Student Sean McQuade, Rutgers University - Camden, expected Spring 2018.
- **Supervisor** of Postdoctoral Associate Maria Laura Delle Monache, Rutgers - Camden, 2014-16.

- **Supervisor** of REU students: Juliette Daily and Jamie Ferns, (NSF sponsored) Summer Research Experience for Undergraduate at Rutgers - Camden, Summer 2015.
- **Co-Supervisor** (with Desmond Lun, Computer Science RUC) for the PhD Thesis of CCIB PhD Student Harish Swaminathan, CCIB at Rutgers University - Camden, "Computational methods for the interpretation of forensic DNA samples", Fall 2015.
- **Supervisor** of Kyra Jenkins, Undergraduate Research Grant at Rutgers - Camden, Spring 2016.
- **Supervisor** of Millicent Kipp, Undergraduate Research Grant at Rutgers - Camden, Spring 2016. (Dean's Undergraduate Research Prize.)
- **Supervisor** of Visiting Master Student Joseph-Andre Turk (Ecole Polytechnique, Paris), Rutgers - Camden, Summer 2016.
- **Supervisor** of CCIB Master Student Zheming An, Rutgers University - Camden, thesis expected May 2018.
- **Supervisor** of CCIB PhD Student Nathaniel Merrill, Rutgers University - Camden, expected Spring 2021.
- **Supervisor** of Postdoctoral Associate Thibault Liard, Rutgers - Camden, 2017.
- **Supervisor** of Postdoctoral Associate Giulia Cavagnari, Rutgers - Camden, 2017.
- **Supervisor** of Visiting Master Student Anais Rat (Ecole Centrale, Marseille), Rutgers - Camden, Spring-Summer 2017.
- **Supervisor** of Visiting Master Student Remi Robin (Ecole Polytechnique, Paris), Rutgers - Camden, Spring-Summer 2018.

Main Conferences

- **Workshop on Nonsmooth Analysis and Geometric Methods in Deterministic Optimal Control**, IMA, Minneapolis, February 1993.
- **Workshop on Differential Inclusions**, International Banach Center, Warsaw, May 1993.
- **AMS Summer Research Institute "Geometric control theory"**, Boulder, Colorado, July 1997.
- **V.I. Arnold Seminar**, Moscow University, September 1997.
- **IPERAQ97**, hyperbolic problems, University of L'Aquila, October 1997.
- **Workshop on nonlinear control systems**, IHP, Paris, January 1998.
- **Workshop on hyperbolic conservation laws**, Lisbon, April 1999.
- **Equadiff'99**, Berlin, August 1999.
- **HYP 2000: Hyperbolic conservation laws**, Magdeburg, February 2000.
- **NCN Pedagogical School on Optimal Control**, Coimbra, September 2001.

- **Workshop on Pisot Numbers and Real Number Computations**, Rome, October 2001.
- **UMI-AMS Joint Meeting**, Pisa, June 2002 (2 invited lectures).
- **Trimester on Dynamical and Control Systems**, SISSA-ICTP, Sept. 8 - Dec. 7, 2003.
- **CIRA summer school**, Bertinoro, Forli, 2003.
- **IFAC Workshop NOLCOS 2004**, Stuttgart, September 2004.
- **IPERPI04**, hyperbolic problems, University of Pisa, October 2004.
- **Around HYperbolic and Kinetic Equations 3**, meeting of the HYKE network, Rome, 13-15 April 2005.
- **1st HYCON PhD School on Hybrid Systems**, University of Siena, July 19-22, 2005.
- **Mathematical Models of Traffic Flow**, Nice University, November 2-4, 2005.
- **Optimal transport: theory and applications**, Centro DeGiorgi, Pisa, November 14-18, 2006.
- **IEEE Conference on Decision and Control**, 1995 New Orleans, 1997 San Diego, 1998 Tampa, 1999 Phoenix, 2000 Sidney, 2002 Las Vegas, 2003 Maui, 2004 Nassau, 2005 Sevilla.
- **Plenary Speaker International Workshop on "Nonlinear Hyperbolic Problem: a perspective view on conservation laws"**, Istituto Nazionale di Alta Matematica (INDAM), Rome, May 2007.
- **Workshop on "Direct, Inverse and Control Problems for PDE's DICOP"**, Rome, June 2007.
- **Annual HYCON Conference 2007**, L'Aquila, September 2007.
- **Workshop on "Mathematical Models of Traffic Flow"**, CIRM, Marseille-Luminy, October 2007.
- **Workshop on "Italy in Flames - Causes - Competences - Responsibilities - Proposes"**, Camera dei Deputati, Rome, October 2007.
- **Workshop on "Evolution Equations and Kolmogorov Operators"**, University of Salerno, Fisciano, October 2007.
- **Plenary speaker 12th International Conference Hyp2008 "Hyperbolic problems : theory, numerics and applications"**, College Park, Maryland, 9-13 June 2008.
- **Plenary speaker STAMM 08 Conference**, Trento, Italy, 22-25 September 2008.
- **Plenary speaker IPERBA09 XIII National meeting on hyperbolic problems**, Bari, Italy, 11-13 February 2009.
- **Invited speaker Workshop on Interdisciplinary Mathematics**, May 10-11, 2010, PennState University, State College, PA.
- **LIDS Colloquium**, M.I.T., Cambridge, MA, March 15th 2011.
- **Math Colloquium**, Rutgers University New Brunswick, NJ, March 25th 2011.
- **Invited speaker "Kinetic Description of Multiscale Phenomena"**, University of Wisconsin - Madison, WI, May 23-27, 2011.
- **Invited speaker ICIAM 2011 International Congress on Industrial and Applied Mathematics**, Vancouver, Canada, July 18-22 2011.
- **CSCAMM seminar**, University of Maryland College Park, MD, October 5th 2011.

- **Invited speaker** RUTCOR-DIMACS Workshop on Stochastic Networks, Rutgers University, New Brunswick, NJ, October 12-14, 2011.
- **Mathematics Colloquium**, Temple University, Philadelphia, PA, October 2011.
- **Applied Analysis Seminar**, PennState University, College State, PA, May 2012.
- **CSMD Seminar Series**, Oak Ridge National Laboratory, TN, May 15-17, 2012
- **SADCO Summer School "New Trends in Optimal Control"**, Ravello, Italy, September, 3-7, 2012.
- **NITRD Workshop on Complex Engineered Networks**, Washington DC, Sept. 20-21, 2012.
- **KI-Net Workshop: Kinetic description of social dynamics: From consensus to flocking**, College Park, MD, November 5-9, 2012.
- **Decision and control seminar**, Coordinated Science Lab, University of Illinois at Urbana Champaign, February 27 2013.
- **PDE seminar**, Brown University, May 3rd 2013.
- **American Control Conference 2013**, invited session on "Vehicle Control and Estimation in the Undersea Environment", Washington, June 17-19 2013.
- **SIAM Conference on Control and Its Applications**, invited session on "Geometric methods for PDEs: modeling and control", San Diego, CA, July 8-10 2013.
- **51st Annual Allerton Conference on Communication, Control and Computing 2013**, invited session on "Vehicular Traffic", Allerton, IL, October 2-4, 2013.
- **Plenary Speaker at Conference on New Trends in Optimal Control**, Tours, France, June 23-27 2014.
- **ICIAM 2015**, invited session on "Industrial Mathematics around the world, Beijing, August 10-15 2015.
- **Math Colloquium** of Drexel University, Philadelphia, November 9th 2015.
- **11th Meeting on Nonlinear Hyperbolic PDEs and Applications**, Invited Speaker, Triest, Italy, June 13-17 2016.
- **The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Invited Speaker, Orlando, FL, July 1-5, 2016.
- **Paths in Mathematical Control Theory** in honor of Andrea Bacciotti and Luciano Pandolfi 70th birthday, Plenary speaker, Turin, Italy, February 26-27 2018.
- **Joint Mathematics-Mechanical and Aerospace Engineering Colloquium**, University of Colorado at Colorado Springs, March 2nd 2018.
- **14th SIAM Front Range Applied Math Student Conference**, Keynote speaker, University of Colorado at Denver, March 3rd 2018.

Teaching Activity

PhD and Graduate courses.

- 1994/95 SISSA "Mathematical Control Theory".
- 1995/96 SISSA "Systems of Conservation Laws".
- 1996/97 SISSA "Topics in Control Theory".
- 1997/98 SISSA "Geometric Control Theory".
- 1999/00 University of Naples "Hyperbolic Systems of Conservation Laws".
- 1999/00 SISSA "Optimal and Asymptotic Stabilization of Control Systems".
- 2000/01 SISSA "Synthesis Theory in Optimal Control".
- 2001/02 SISSA "Introduction to Control Theory".
- 2002/03 University of Rome "La Sapienza", Master course "Motion Planning for Control Systems".
- 2002/03 SISSA "Introduction to Stochastic control".
- 2003/04 SISSA, Trimester on Dynamical and Control Systems, "Optimal Syntheses".
- 2003/04 University of Rome "La Sapienza", "Stochastic Control and applications to Finance".
- 2003/04 SISSA "Introduction to Mathematical Finance".
- 2004/05 University of Rome "La Sapienza", "Stochastic Control and applications to Finance".
- 2004/05 University of Salerno, "Fluidodynamic models for car traffic on networks".
- 2005/6 INDAM and University of Rome "La Sapienza", "Traffic flow on networks"
- 2006/7 University of Rome "La Sapienza", "Traffic flow on networks"
- 2007/8 University of Rome "La Sapienza", "Traffic flow on networks"
- 2008/9 University of Rome "La Sapienza", "Traffic flow on networks"
- 2009/10 Rutgers University, "Mathematical Methods for Systems Biology"
- 2010/11 Rutgers University, "Mathematical Methods for Systems Biology I"
- 2010/11 Rutgers University, "Mathematical Methods for Systems Biology II"
- 2011/12 Rutgers University, curriculum development, DIMACS-Bowdoin College-MCRN "Sustainable Planet Education Workshop", October 20-22, 2011.
- 2011/12 Rutgers University, "Mathematical Methods for Systems Biology I"
- 2011/12 Rutgers University, "Mathematical Methods for Systems Biology II"
- 2011/12 Rutgers University Graduate Independent Studies: Richard Connor, Nacir Hmidouch, Minyoung Kim, Shamima Nasrin.
- 2012/13 Rutgers University, "Essentials of Biomathematics I"
- 2012/13 Rutgers University, "Mathematics for Systems Biology"
- 2013/14 Rutgers University, "Essentials of Biomathematics I"
- 2013/14 Rutgers University, "Mathematics for Systems Biology"
- 2014/15 Rutgers University, "Essentials of Biomathematics I"
- 2014/15 Rutgers University, "Mathematics for Systems Biology"
- 2015/16 Rutgers University, "Mathematics for Systems Biology"
- 2015/16 Rutgers University Graduate Independent Studies: Abdulrhman Areshie
- 2016/17 Rutgers University, "Essentials of Biomathematics I"
- 2016/17 Rutgers University Graduate Independent Studies: Albandari Alhejaili
- 2017/18 Rutgers University, "Mathematical Methods for Systems Pharmacology"
- 2017/18 Rutgers University Graduate Independent Studies: Chris Sottolano

PhD Program Committees

- SISSA, PhD in Functional Analysis and Applications, 1994-98.
- University of Salerno, PhD in Mathematics, 2006-2013.
- LUISS University, Rome, PhD in Mathematical Methods for Economy, Business, Finance and Insurances, 2006-2010.

- University of Rome "La Sapienza", PhD in Mathematical Models and Methods for Technology and Society, 2008-.
- Rutgers University - Camden, PhD in Computational and Integrative Biology, 2010-.

Undergraduate Courses.

- 1992/93 and 93/94 Teaching Assistant, University of Padova, "Calculus" and "Calculus in many variables" for Electronic and Civil Engineering.
- 1994/95 Rutgers University "Calculus" for Pre-Med and others.
- 1996/97 ICTP (Trieste) "Calculus in many variables" for Diploma Course.
- 1998/99 University of Salerno "Mathematics 2" (Linear Algebra, Calculus in many variables) for Electronic and Mechanical Engineering.
- 1999/00 University of Salerno "Mathematics 2,3 and 4" (Linear Algebra, Calculus in many variables, Complex analysis, Fourier and Laplace transforms, Differential equations) for Electronic and Chemical Engineering.
- 2000/01 University of Salerno "Mathematics 1,3 and 4" (Calculus, Complex analysis, Fourier and Laplace transforms, Differential equations) for Electronic and Chemical Engineering.
- 2009/10 Rutgers University "Math Seminars" (Introduction to continuous ode and pde models for vehicular traffic).
- 2014 University of Padua, "Scuola Galileiana" (Calculus of variations, module: sparse control of multi-agent systems).
- 2015 Rutgers University "Partial Differential Equations and Boundary Value Problems".

Pre-University Orientation.

- 2006 Scuola Normale Superiore di Pisa-San Miniato "The Impact of Applied Mathematics in Modern Society".
- 2007 Scuola Normale Superiore di Pisa-San Miniato "The Mathematics of Vehicular Traffic".

Prizes.

- 2013 Chancellor's Award for Teaching Excellence, Rutgers University - Camden.

PUBLICATIONS

Books

1. U. BOSCAIN, B. PICCOLI: Optimal Synthesis for Control Systems on 2–D Manifolds, *SMAI Springer Series: Mathématiques et Applications vol. 43*, Springer Verlag, New York – Heidelberg, 2004.
2. M. GARAVELLO, B. PICCOLI: Traffic flow on networks, *Applied Math Series vol. 1*, American Institute of Mathematical Sciences, Springfield, 2006.
3. A. BRESSAN, B. PICCOLI: Introduction of Mathematical Theory of Control, *Applied Math Series vol. 2*, American Institute of Mathematical Sciences, Springfield, 2007.
4. C. D'APICE, S. GOETTLICH, M. HERTY, B. PICCOLI: Modeling, Simulation and Optimization of Supply Chains. A Continuous Approach, *SIAM book series on Mathematical Modeling and Computation*, Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA, 2010.
5. E. CRISTIANI, B. PICCOLI, A. TOSIN: Multiscale Modeling of Pedestrian Dynamics, *Springer MS&A: Modeling, Simulation and Applications, Vol. 12*, Springer-Verlag, Heidelberg-Berlin, 2014.
6. M. GARAVELLO, K. HAN, B. PICCOLI: Models for Vehicular Traffic on Networks, *Applied Math Series vol. 9*, American Institute of Mathematical Sciences, Springfield, 2016.

Edited Books

7. B. PICCOLI AND M. RASCLE EDS.: Modelling and Optimisation of Flows on Networks, *Springer CIME Lecture Notes 2062*, Springer, Berlin Heidelberg, 2013.

Lecture Notes

8. B. PICCOLI: Optimal Control, *chapter of the book "Foliations on surfaces" by I. Nikolaev, Ergebnisse der Mathematik und ihrer Grenzgebiete, A Series of Modern Surveys in Mathematics, vol. 41, pp. 391–401*, Springer-Verlag, New York 2000.
9. U. BOSCAIN, B. PICCOLI: A Short Introduction to Optimal Control, *Lecture Notes for the CIMPA School, Tlemcen, Algeria, 2003. In Controle non lineaire et applications, T. Sari ed., Collection Travaux en Cours, Hermann, Paris, 2005.*

Research papers in journals

10. G. CRASTA, B. PICCOLI: Bang–bang property for Bolza problems in two dimensions, *Journal of Optimization Theory and Applications*, **83** (1994), 155–165.
11. A. BRESSAN, B. PICCOLI: A Baire Category approach to the Bang-Bang Property, *Journal of Differential Equations*, **116** (1995), 318–337.
12. G. CRASTA, B. PICCOLI: Special bang–bang solutions of nonlinear control problems, *Nonlinear Differential Equations and Applications*, **2** (1995), 323–339.
13. B. PICCOLI: Time-optimal control problems for the swing and the ski, *International Journal of Control*, **62** (1995), 1409–1429.

14. B. PICCOLI: Regular time-optimal syntheses for smooth planar systems, *Rendiconti del Seminario Matematico di Padova*, **95** (1996), 59–79.
15. B. PICCOLI: Classification of generic singularities for the planar time-optimal synthesis, *SIAM Journal on Control and Optimization*, **34** (1996), 1914–1946.
16. A. BRESSAN, B. PICCOLI: Structural stability for time-optimal planar syntheses, *Dynamics of continuous, discrete and impulsive systems*, **3** (1997), 335–371.
17. G. CRASTA, B. PICCOLI: Viscosity solutions and uniqueness for systems of inhomogeneous balance laws, *Discrete and Continuous Dynamical Systems*, **3** (1997), 477–502.
18. A. BRESSAN, B. PICCOLI: A generic classification of time optimal planar stabilizing feedbacks, *SIAM Journal on Control and Optimization*, **36** (1998), 12–32.
19. B. PICCOLI: Infinite time regular synthesis, *ESAIM: Control, Optimisation and Calculus of Variations*, **3** (1998), 381–405.
20. U. BOSCAIN, B. PICCOLI: Geometric control approach for synthesis theory, *Rendiconti Sem. Mat. Università di Torino*, **56** (1998), 53–67.
21. F. PAIT, B. PICCOLI, A. BITTAR: A hybrid controller for a nonholonomic system, *Controle & Automatica (SBA)*, **9** (1998), 85–89.
22. D. AMADORI, P. BAITI, P. LEFLOCH, B. PICCOLI: Nonclassical shocks and the Cauchy problem for nonconvex conservation laws, *Journal of Differential Equations*, **151** (1999), 345–372.
23. P. BAITI, P.G. LEFLOCH, B. PICCOLI: Nonclassical shocks and the Cauchy problem: general conservation laws, *Contemporary Mathematics*, **238** (1999), 1–25.
24. B. PICCOLI, H. J. SUSSMANN: Regular synthesis and sufficiency conditions for optimality, *SIAM Journal on Control and Optimization*, **39** (2000), 359–410.
25. A. BRESSAN, G. CRASTA, B. PICCOLI: Well-posedness of the Cauchy problem for $n \times n$ Systems of Conservation Laws, *Memoirs of the American Mathematical Society*, **146/694** (2000), 134.
26. J.-M. MERCIER, B. PICCOLI: Global continuous Riemann solver for nonlinear elastodynamics, *Archive for Rational Mechanics and Analysis*, **156** (2001), 89–119.
27. U. BOSCAIN, B. PICCOLI: Extremal synthesis for generic planar systems, *Journal of Dynamical and Control Systems*, **7** (2001), 209–258.
28. P. BAITI, P.G. LEFLOCH, B. PICCOLI: Uniqueness of classical and nonclassical solutions for nonlinear hyperbolic systems, *Journal of Differential Equation*, **172** (2001), 59–82.
29. Y. CHITOUR, B. PICCOLI: Controllability for discrete systems with a finite control set, *Mathematics of Control Signal and Systems*, **14** (2001), 173–193.
30. G. ALBANO, C. D’APICE, G. GARGIULO, B. PICCOLI: On the performance of hybrid stabilizers, *Int. Journal of Control*, **74** (2001), 1020–1032.
31. U. BOSCAIN, B. PICCOLI: Morse property for minimum time on 2-D manifolds, *Journal of Dynamical and Control Systems*, **7** (2001), 385–423.
32. U. BOSCAIN, B. PICCOLI: Abnormal extremals for minimum time on the plane, *SIAM Journal on Control and Optimization*, **40** (2002), 1333–1357.
33. A. MARIGO, B. PICCOLI: Regular Syntheses and Solutions to Discontinuous ODEs, *ESAIM : Control, Optimisation and Calculus of Variations*, **7** (2002), 291–307.

34. A. BICCHI, A. MARIGO, B. PICCOLI: Quantized controls systems and discrete nonholonomy, *IEEE Transactions on Automatic Control*, **47** (2002), 546–563.
35. J.M. MERCIER, B. PICCOLI: Admissible Riemann solvers for genuinely nonlinear p system of mixed type, *Journal of Differential Equations*, **180** (2002), 395–426.
36. A. MARIGO, B. PICCOLI: Cooperative controls for Air Traffic Management, *Communication in Pure and Applied Analysis*, **2** (2003), 349–362.
37. C. D’APICE, M. GARAVELLO, R. MANZO, B. PICCOLI: Hybrid optimal control: case study of a car with gears, *Int. Journal of Control*, **76** (2003), 1272–1284.
38. A. MARIGO, B. PICCOLI: Safety Controls and application to the Dubin’s car, *Nonlinear Differential Equations and Applications*, **11** (2004), 73–94.
39. P. BAITI, P.G. LEFLOCH, B. PICCOLI: Existence theory for nonclassical entropy solutions: scalar conservation laws, *Z. Angew. Math. Phys.*, **55** (2004), 927–945.
40. A. AMADORI, M. ADAMO, M. BERNASCHI, C. LA CHIOMA, A. MARIGO, B. PICCOLI, S. SBARAGLIA, A. UBOLDI, D. VERGNI; P. FABBRI, D. IACOVONI, F. NATALE, S. SCALERA, L. SPILOTRO, A. VALLETTA: Optimal strategies for the issuances of Public Debt securities, *International Journal of Theoretical and Applied Finance*, **7** (2004), 805–822. (In collaboration with the Italian Ministry of the Economy and Finance)
41. M. GARAVELLO, B. PICCOLI: Hybrid Necessary Principle, *SIAM J. Control and Optimization*, **43** (2005), 1867–1887.
42. G. COCLITE, M. GARAVELLO, B. PICCOLI: Traffic flow on a road network, *SIAM J. Math. Analysis*, **36** (2005), 1862–1886.
43. Y. CHITOUR, B. PICCOLI: Traffic Circles and Timing of Traffic Lights for Cars Flow, *Discrete and Continuous Dynamical Systems Series B*, **5** (2005), 599–630.
44. M. GARAVELLO, B. PICCOLI: Source-Destination Flow on a Road Network, *Communications Mathematical Sciences*, **3** (2005), 261–283.
45. B. PICCOLI, J. KULKARNI: Pumping a swing by standing and squatting: do children pump time optimally?, *IEEE Control Systems Magazine*, **25** (2005), 48–56.
46. Y. CHITOUR, A. MARIGO, B. PICCOLI: Quantization of the rolling body problem with applications to motion planning, *Systems and Control Letters*, **54** (2005), 999–1013.
47. G. BRETTI, R. NATALINI, B. PICCOLI: Numerical approximations of a traffic flow model on networks, *Networks and Heterogeneous Media*, **1** (2006), 57–84.
48. U. BOSCAIN, I. NIKOLAEV, B. PICCOLI: Classification of time-optimal syntheses for 2-D manifolds, *Journal of Mathematical Sciences*, **135** (2006), 3109–3124 .
49. M. GARAVELLO, B. PICCOLI: Traffic flow on a road network using the Aw-Rascle model, *Communications on Partial Differential Equations*, **31** (2006), 243–275.
50. G. BRETTI, R. NATALINI, B. PICCOLI: Fast algorithms for the approximation of a traffic flow model on networks, *Discrete and Continuous Dynamical Systems - Series B*, **6** (2006), 427–448.
51. F. CASTIGLIONE, B. PICCOLI: Optimal control in a model of dendritic cell transfection cancer immunotherapy, *Bulletin of Mathematical Biology*, **68** (2006), 255–274.
52. A. BICCHI, A. MARIGO, B. PICCOLI: Feedback encoding for efficient symbolic control of dynamical systems, *IEEE Transactions on Automatic Control*, **51** (2006), 987–1002.

53. B. PICCOLI: Special issue from the launching meeting of Networks and Heterogeneous Media. Held in Maiori, June 21–23, 2006, *Networks and Heterogeneous Media*, **1** (2006), i–ii.
54. F. CASTIGLIONE, B. PICCOLI: Optimal vaccine scheduling in cancer immunotherapy, *Physica A: Statistical and Theoretical Physics*, **370** (2006), 672–680.
55. V. BRUNI, B. PICCOLI, D. VITULANO: Time Scale Dependencies for Image Compression', *Journal of Multimedia, Academic Press*, **1** (2006), 44–55.
56. CIRO D'APICE, ROSANNA MANZO, BENEDETTO PICCOLI: Packet flow on telecommunication networks, *SIAM Journal on Mathematical Analysis*, **38** (2006), 717–740.
57. A. AMADORI, C. DAPICE, R. MANZO, B. PICCOLI: Hybridization of optimal control problems, *International Journal of Control*, **80** (2007), 268-280.
58. G. BRETTI, R. NATALINI, B. PICCOLI: A Fluid-Dynamic Traffic Model on Road Networks, *Arch. Comput Methods Eng.*, **14** (2007), 139-172.
59. E. GIREJKO, B. PICCOLI: On some concepts of generalized differentials, *Set Valued Analysis*, **15** (2007), 163-183.
60. M. HERTY, A. KLAR, B. PICCOLI: Existence of solutions for supply chain models based on partial differential equations, *SIAM Journal on Mathematical Analysis*, **39** (2007), 160-173.
61. C. LA CHIOMA, B. PICCOLI: HJM interest rate dynamics and approximate consistency for forward rates, *Math. Finance*, **17** (2007), 427-447.
62. N. CASONE, C. D'APICE, B. PICCOLI, L. RARITA: Optimization of traffic on road networks, *M³AS Mathematical Methods and Modelling in Applied Sciences*, **17** (2007), 1587-1617.
63. G. BRETTI, C. D'APICE, M. MANZO, B. PICCOLI: A continuum-discrete model for supply chains dynamics, *Networks and Heterogeneous Media*, **2** (2007), 661–694.
64. F. CASTIGLIONE, B. PICCOLI: Cancer immunotherapy, mathematical modeling and optimal control, *J. Theo. Biol.*, **247** (2007), 723–732.
65. A. CAPPUCIO, F. CASTIGLIONE, B. PICCOLI: Determination of the optimal therapeutic protocol in cancer immunotherapy, *Mathematical Biosciences*, **209** (2007), 1-13.
66. G. BRETTI, R. NATALINI, B. PICCOLI: Numerical algorithms for simulation of a traffic model on road networks, *Journal of Computational and Applied Mathematics*, **201** (2007), 71-77.
67. M. GARAVELLO, R. NATALINI, B. PICCOLI, TERRACINA A.: Conservation laws with discontinuous flux, *Netw. Heterog. Media*, **2** (2007), 159-179.
68. E. GIREJKO, B. PICCOLI: On generalized differential quotients and other generalized differentials, *International Journal of Tomography and Statistics*, **5** (2007), 115-120.
69. C. D'APICE, R. MANZO, B. PICCOLI: A fluid dynamic model for telecommunication networks with sources and destinations, *SIAM Journal on Applied Mathematics*, **68** (2008), 981-1003.
70. A. MARIGO, B. PICCOLI: A fluid dynamic model for T-Junctions, *SIAM Journal on Mathematical Analysis*, **39** (2008), 2016-2032.
71. G. BRETTI, B. PICCOLI: A tracking algorithm for car path on road networks, *SIAM Journal on Applied Dynamical Systems*, **7** (2008), 510-531.
72. C. D'APICE, B. PICCOLI: Vertex flow models for vehicular traffic on networks, *Mathematical Models and Methods in Applied Sciences (M³AS)*, **18** (2008), 1299–1315.

73. V. BRUNI, B. PICCOLI, D. VITULANO: Wavelets and pde for image denoising, *Electronic Letters on Computer Vision and Image Analysis (ELCVIA), Special Issue on Partial Differential Equations Methods in Graphics and Vision*, **6** (2008), 36-53.
74. A. CAPPUCCIO, F. CASTIGLIONE, B. PICCOLI AND V. TOZZI: Evaluation of HIV/CD4+ T cell dynamic parameters in patients treated with genotypic resistance testing-guided HAART, *Current HIV Research*, **6** (2008), 363-369.
75. A. CASCONI, C. D'APICE, B. PICCOLI, L. RARITA: Circulation of car traffic in congested urban areas, *Communications in Mathematical Sciences*, **6** (2008), 765-784.
76. A. CASCONI, R. MANZO, B. PICCOLI, L. RARITA: Optimization versus randomness for car traffic regulation, *Physical Review E*, **78** (2008), 026113.
77. A. MASON, M. E. BROUCKE, B. PICCOLI: Time Optimal Swing-Up of the Planar Pendulum, *IEEE Transaction on Automatic Control*, **53** (2008), 1876-1886.
78. V. BRUNI, B. PICCOLI, D. VITULANO: A fast computation method for time scale signal denoising, *Signal, Image and Video Processing*, **3** (2009), 63-83.
79. B. PICCOLI, K. ZADARNOWSKA, M. GAETA: Stochastic Algorithms for Robustness of Control Performances, *Automatica*, **45** (2009), 1407-1414.
80. M. GARAVELLO, B. PICCOLI: On fluido-dynamic models for urban traffic, *Networks and Heterogeneous Media*, **4** (2009), 107-126.
81. S. BLANDIN, G. BRETTI, A. CUTOLO, B. PICCOLI: Numerical simulations of traffic data via fluid dynamic approach, *Applied Mathematics and Computations*, **210** (2009), 441-454.
82. M. GARAVELLO, B. PICCOLI: Time-varying Riemann solvers for conservation laws on networks, *Journal of Differential Equations*, **247** (2009), 447-464.
83. G. BASTIN, A. BAYEN, C. D'APICE, X. LITRICO, B. PICCOLI: Open problems and research perspectives for irrigation channels, *Networks and Heterogeneous Media*, **4** (2009), i-v.
84. B. PICCOLI, A. TOSIN: Pedestrian flows in bounded domains with obstacles, *Continuum Mechanics and Thermodynamics*, **21** (2009), 85-107.
85. M. GARAVELLO, B. PICCOLI: Conservation laws on complex networks, *Annales Institute Henri Poincaré (C) Nonlinear Analysis*, **26** (2009), 1925-1951.
86. C. D'APICE, R. MANZO, B. PICCOLI: Modelling supply networks with partial differential equations, *Quarterly of Applied Mathematics*, **67** (2009), 419-440.
87. F. BULLO, J. CORTES, B. PICCOLI: Special issue on control and optimization in cooperative networks, *SIAM Journal of Control and Optimization*, **48** (2009), vii.
88. P. FRASCA, P. MASON, B. PICCOLI: Detection of Gaussian signals via hexagonal sensor networks, *International Journal of Mathematical Modelling and Numerical Optimisation (IJMMNO)*, **1** (2010), 39-55.
89. C. D'APICE, R. MANZO, B. PICCOLI: Existence of solutions to Cauchy problems for a mixed continuum-discrete model for supply chains and networks, *Journal of Mathematical Analysis and Applications*, **362** (2010), 374-386.
90. A. CASCONI, A. MARIGO, B. PICCOLI, L. RARITÁ: Decentralized optimal routing for packets flow on data networks, *Discrete and Continuous Dynamical Systems - Series B*, **13** (2010), 59-78.
91. R.M. COLOMBO, P. GOATIN, B. PICCOLI: Road networks with phase transitions, *Journal of Hyperbolic Differential Equations*, **7** (2010), 85-106.

92. A. BALLUCHI, C. D'APICE, M. GAETA, B. PICCOLI, A. L. SANGIOVANNI VINCENTELLI, K. ZADARNOWSKA: Equilibria and feedback for a hybrid model of idle speed control, *International Journal of Robust and Nonlinear Control*, **20** (2010), 515-530.
93. N. DUBBINI, B. PICCOLI, A. BICCHI: Left invertibility of discrete systems with finite inputs and quantized output, *International Journal Of Control*, **83** (2010), 798-809.
94. D. WORK, S. BLANDIN, O.-P. TOSSAVAINEN, B. PICCOLI, A. BAYEN: A traffic model for velocity data assimilation, *Applied Mathematics Research Express*, **2010** (2010), 1-35.
95. E. CRISTIANI, C. DE FABRITIIS, B. PICCOLI: A fluid dynamic approach for traffic forecast from mobile sensors data, *Communications in Applied and Industrial Mathematics*, **1** (2010), 54-71.
96. M. CARAMIA, C. D'APICE, B. PICCOLI AND A. SGALAMBRO: Fluidsim: a car traffic simulation prototype based on fluid dynamic, *Algorithms*, **3** (2010), 291-310.
97. L. GRECO, M. GAETA, B. PICCOLI: Deployment of sensors in a network-like environment, *IEEE Transaction on Automatic Control*, **55** (2010), 2580-2585.
98. L. RARITA, C. D'APICE, B. PICCOLI, D. HELBING: Sensitivity analysis of permeability parameters for flows on Barcelona networks, *Journal of Differential Equations*, **249** (2010), 3110-3131.
99. C. LATTANZIO, B. PICCOLI: Coupling of microscopic and macroscopic traffic models at boundaries, *Mathematical Models and Methods in Applied Sciences*, **20** (2010), 2349-2370.
100. S. BLANDIN, D. WORK, P. GOATIN, B. PICCOLI, A. BAYEN: A general phase transition model for vehicular traffic, *SIAM Journal on Applied Mathematics*, **71** (2011), 107-127.
101. C. LATTANZIO, A. MAURIZI, B. PICCOLI: Moving bottlenecks in car traffic flow: a PDE-ODE coupled model, *SIAM Journal on Mathematical Analysis*, **43** (2011), 50-67.
102. M. GARAVELLO, B. PICCOLI: Entropy type conditions for Riemann solvers at nodes, *Advances in Differential Equations*, **16** (2011), 113-144.
103. E. CRISTIANI, P. FRASCA, B. PICCOLI: Effects of anisotropic interactions on the structure of animal groups, *Journal of Mathematical Biology*, **62** (2011), 569-588.
104. E. CRISTIANI, B. PICCOLI, C. TOSIN: Multiscale modeling of granular flows with application to crowd dynamics, *SIAM Multiscale Modeling and Simulations*, **9** (2011), 155-182.
105. B. PICCOLI, A. TOSIN: Time-evolving measures and macroscopic modeling of pedestrian flow, *Archive for Rational Mechanics and Analysis*, **199** (2011), 707-738.
106. R.M. COLOMBO, B. PICCOLI: Crowd dynamics: results and perspectives, *Networks and Heterogeneous Media*, **6** (2011), i-iii.
107. N. DUBBINI, B. PICCOLI, A. BICCHI: Left invertibility of discrete-time I/O quantized linear systems, *Mathematics of Controls Signals and Systems*, **23** (2011), 117-139.
108. A. CUTOLO, L. RARITA, B. PICCOLI: Fast numerical methods for an ODE-PDE model of supply chains, *SIAM Journal on Scientific Computing*, **33** (2011), 1669-1688.
109. C. D'APICE, R. MANZO, B. PICCOLI: On the validity of fluid-dynamic models for data networks, *Journal of Networks*, **7** (2012), 980-990.
110. R. MANZO, B. PICCOLI, L. RARITA: Optimal distribution of traffic flows at junctions in emergency cases, *European Journal on Applied Mathematics*, **23** (2012), 515-535.

111. C. D'APICE, R. MANZO, B. PICCOLI: Optimal input flows for a Pde-Ode model of supply chains, *Communications in Mathematical Sciences*, **10** (2012), 1225–1240.
112. B. PICCOLI: Optimal syntheses for state constrained problems and optimization of cancer therapies, *Mathematical Control and Related Fields*, **2** (2012), 383–398.
113. N. BELLOMO, B. PICCOLI, A. TOSIN: Modeling crowd dynamics from a complex system viewpoint, *Mathematical Models and Methods in Applied Sciences*, **22** (2012), 29.
114. M. HERTY, C. JOERRES, B. PICCOLI: Existence of solutions to supply chain models based on partial differential equations with discontinuous flux function, *Journal on Mathematical Analysis and Applications*, **401** (2013), 510–517.
115. B. PICCOLI, F. ROSSI: Transport equation with nonlocal velocity in Wasserstein spaces: convergence of numerical schemes, *Acta Applicandae Mathematicae*, **124** (2013), 73–105.
116. V. BRUNI, S. MARCONI, B. PICCOLI, D. VITULANO: Instantaneous frequency estimation of interfering FM signals through time-scale isolevel curves, *Signal Processing*, **93** (2013), 882–896.
117. M. GARAVELLO, B. PICCOLI: Coupling of LWR and phase transition models at boundary, *Journal of Hyperbolic Differential Equations*, **10** (2013), 577–636.
118. C. D'APICE, R. MANZO, B. PICCOLI: Numerical schemes for the optimal input flow of a supply-chain, *SIAM Journal on Numerical Analysis*, **51** (2013), 2634–2650.
119. M. CAPONIGRO, M. FORNASIER, B. PICCOLI, E. TRELAT: Sparse stabilization and optimal control of the Cucker-Smale model, *Mathematics of Control and Related Fields*, **3** (2013), 447–466.
120. M. GARAVELLO, B. PICCOLI: Coupling of microscopic and phase transition models at boundary, *Networks and Heterogeneous Media*, **8** (2013), 649–661.
121. B. PICCOLI, F. ROSSI: Generalized Wasserstein distance and its application to transport equation with source, *Archive for Rational Mechanics and Analysis*, **211** (2014), 335–358.
122. K. HAN, V. GAYAH, B. PICCOLI, T.L. FRIESZ, T. YAO: On the continuum approximation of the on-and-off signal control on dynamic traffic networks, *Transportation Research Part B*, **61** (2014), 73–97.
123. A. BRESSAN, S. CANIC, M. GARAVELLO, M. HERTY, B. PICCOLI: Flows on networks: recent results and perspectives, *European Mathematical Society Survey*, **1** (2014), 47–111.
124. M. FORNASIER, B. PICCOLI, F. ROSSI: Mean-field sparse optimal control, *Philosophical Transaction of Royal Society of London Series A*, **372** (2014), 20130400.
125. M. CAPONIGRO, M. FORNASIER, B. PICCOLI, E. TRELAT: Sparse stabilization and control of alignment models, *Mathematical Models and Methods in Applied Sciences*, **25** (2015), 521–564.
126. B. PICCOLI, K. HAN, T.L. FRIESZ, T. YAO, J. TANG: Second Order Models and Traffic Data from Mobile Sensors, *Transportation Research C*, **52** (2015), 32–56.
127. S. CANIC, B. PICCOLI, J. QIU, T. REN: Runge-Kutta Discontinuous Galerkin Method for Traffic Flow Model on Networks, *Journal of Scientific Computing*, **63** (2015), 233–255.
128. M. CAPONIGRO, A. LAI, B. PICCOLI: A nonlinear model of opinion formation on the sphere, *Dynamics of Continuous and Discrete Systems*, **35** (2015), 4241–4268.

129. M. BRAVO, M. CAPONIGRO, E. LEIBOWITZ, B. PICCOLI: Keep right or left? Towards a cognitive-mathematical model for pedestrians, *Networks and Heterogeneous Media*, **10** (2015), 559–578.
130. B. PICCOLI, F. ROSSI, E. TRELAT: Control to flocking of the kinetic Cucker-Smale model, *SIAM Journal on Mathematical Analysis*, **47** (2015), 4685–4719.
131. M. HERTY AND B. PICCOLI: Numerical methods for the computation of tangent vectors to 2x2 hyperbolic systems of conservation laws, *Communications in Mathematical Sciences*, **14** (2016), 683–704.
132. B. PICCOLI, N. POURADIER DUTEIL, B. SCHARF: Optimal control of a collective migration model, *Mathematical Models and Methods in Applied Sciences*, **26** (2016), 383–417.
133. K. HAN, B. PICCOLI, S. SZETO: Continuous-time Link-based Kinematic Wave Model: Formulation, Solution Existence and Well-Posedness, *Transportmetrica B: Transport Dynamics*, **4** (2016), 187–222.
134. B. PICCOLI, F. ROSSI: On properties of the generalized Wasserstein distance, *Archive for Rational Mechanics and Analysis*, **222** (2016), 1339–1365.
135. K. HAN, B. PICCOLI, T.L. FRIESZ: Continuity of the path delay operator for dynamic network loading with spillback, *Transportation Research Part B*, **92** (2016), 211–233.
136. M. BRIANI, B. PICCOLI, J.-M. QIU: Notes on RKDG methods for shallow-water equations in canal networks, *Journal of Scientific Computing*, **68** (2016), 1101–1123.
137. B. PICCOLI: Multiscale approaches to crowd dynamics and the reliability of data from experiments: Comment on Human behaviours in evacuation crowd dynamics: From modelling to big data toward crisis management by Nicola Bellomo et al., *Physics of Life Reviews*, **18** (2016), 46–47.
138. A. AYDOGDU, P. FRASCA, C. D’APICE, R. MANZO, J.M. THORNTON, B. GACHOMO, T. WILSON, B. CHEUNG, U. TARIQ, W. SAIDEL, B. PICCOLI: Modeling birds on wires, *Journal of Theoretical Biology*, **415** (2017), 102–112.
139. S. BLANDIN, X. LITRICO, B. PICCOLI, A. BAYEN: Regularity and Lyapunov stabilization of weak entropy solutions to scalar conservation laws, *IEEE Transaction on Automatic Control*, **62** (2017), 1620–1635.
140. R. GHEZZI, B. PICCOLI: Optimal control of a multi-scale dynamic model for biofuel production, *Mathematical Control and Related Fields*, **7** (2017), 235–257.
141. M. CAPONIGRO, B. PICCOLI, F. ROSSI, E. TRELAT: Sparse Mean-Field Sparse Jurdjevic-Quinn Control, *Mathematical Models and Methods in Applied Sciences*, **27** (2017), 1223–1253.
142. M. GARAVELLO, B. PICCOLI: Boundary coupling of microscopic and first order macroscopic traffic models, *NoDEA Nonlinear Differential Equations and Applications*, **24** (2017), 24–43.
143. G. CAVAGNARI, A. MARIGONDA, B. PICCOLI: Optimal synchronization problem for a multi-agent system, *Networks and Heterogeneous Media*, **12** (2017), 277–295.
144. Y. LI, C. CLAUDEL, B. PICCOLI, D. WORK: A convex formulation of traffic dynamics on transportation networks, *SIAM Journal on Applied Mathematics*, **77** (2017), 1493–1515.
145. M.L. DELLE MONACHE, B. PICCOLI, F. ROSSI: Traffic regulation via controlled speed limit, *SIAM Journal on Control and Optimization*, **55** (2017), 2936–2958.
146. S. MCQUADE, R. ABRAMS, J.S. BARRETT, B. PICCOLI, K. AZER: LIFE methodology: Towards a robust mathematical framework for quantitative systems pharmacology simulators, *Gene Regulation and Systems Biology*, **11** (2017), 1177625017711414.

147. P. KACHROO, S. AGARWAL, B. PICCOLI, K. OZBAY: Multi-scale Modeling and Control Architecture for V2X Enabled Traffic Streams, *Transactions on Vehicular Technology*, **66** (2017), 4616–4626.
148. M. CAPONIGRO, B. PICCOLI, F. ROSSI, E. TRELAT: Sparse JurdjevicQuinn stabilization of dissipative systems, *Automatica*, **86** (2017), 110–120.
149. K. LEE, P.S. KUMAR, S. MCQUADE, J.Y. LEE, S. PARK, Z. AN AND B. PICCOLI: Experimental and Mathematical Analyses Relating Circadian Period and Phase of Entrainment in *Neurospora crassa*, *Journal of Biological Rhythms*, **32** (2017), 550–559.
150. STERN, R. AND CUI, S. AND DELLE MONACHE, M. L. AND BHADANI, R. AND BUNTING, M. AND CHURCHILL, M. AND HAMILTON, N. AND HAULCY, R. AND POHLMANN, H. AND WU, F. AND PICCOLI, B. AND SEIBOLD, B. AND SPRINKLE, J. AND WORK, D. B.: Dissipation of stop-and-go waves via control of autonomous vehicles: Field experiments, *Transportation Research Part C*, **89** (2018), 205–221.
151. M.L. DELLE MONACHE, P. GOATIN, B. PICCOLI: Priority-based Riemann solver for traffic flow on networks, *Communication on Mathematical Sciences*, **16** (2018), 185–211.
152. M. CAPONIGRO, R. GHEZZI, B. PICCOLI, E. TRELAT: Regularization of chattering phenomena via bounded variation control, *IEEE Transaction on Automatic Control*, **63** (2018), 2046–2060.

Preprints

153. G. CAVAGNARI, A. MARIGONDA, B. PICCOLI: Averaged time-optimal control problem in the space of positive Borel measures, *to appear on ESAIM: Control, Optimisation and Calculus of Variations*.
154. B. PICCOLI, M. TOURNUS: A general existence result for conservation laws with spatial heterogeneities, *submitted to SIAM Journal on Mathematical Analysis*.
155. B. PICCOLI: Measure Differential Equations, *preprint arxiv.org/abs/1708.09738, submitted to Archive for Rational Mechanics and Analysis*.
156. WU, F. AND STERN, R. AND CUI, S. AND DELLE MONACHE, M. L. AND BHADANI, R. AND BUNTING, M. AND CHURCHILL, M. AND HAMILTON, N. AND HAULCY, R. AND POHLMANN, H. AND PICCOLI, B. AND SEIBOLD, B. AND SPRINKLE, J. AND WORK, D. B.: Tracking vehicle trajectories and fuel rates in oscillatory traffic, *submitted to Transportation Research Part C: Emerging Technologies*.
157. S. FAN, Y. SUN, B. PICCOLI, B. SEIBOLD, D. WORK: A collapsed generalized Aw-Rascle-Zhang model and its model accuracy, *submitted to Transportation Research - Part B*.
158. B. PICCOLI, F. ROSSI, M. TOURNUS: A norm for signed measures. Application to non local transport equation with source term, *submitted to Journal de Mathématiques Pures et Appliquées*.
159. T. LIARD AND B. PICCOLI: Well-posedness for scalar conservation laws with moving flux constraints, *submitted to SIAM Journal on Applied Mathematics*.
160. B. PICCOLI, N. POURADIER DUTEIL, E. TRELAT: Sparse control of Hegselmann-Krause models: Black hole and declustering, *submitted to SIAM Journal on Control and Optimization*.
161. B. PICCOLI, F. ROSSI: Measure-theoretic models for crowd dynamics, *submitted to "Crowd dynamics", Bellomo and Gibelli eds. Birkhauser-Springer, 2018*.

162. M. BRIANI, B. PICCOLI: Open canals flow with fluvial to torrential phase transitions on networks, *submitted to Networks and Heterogeneous Media*.
163. R. STERN, Y. CHEN, M. CHURCHILL, F. WU, M.L. DELLE MONACHE, B. PICCOLI, B. SEIBOLD, J. SPRINKLE, D. WORK: Quantifying air quality benefits resulting from few autonomous vehicles stabilizing traffic, *submitted to Transportation Research part D*.
164. N. MERRILL, Z. AN, S. MCQUADE, F. GARIN, K. AZER, R. ABRAMS, B. PICCOLI: Stability of metabolic networks via Linear-In-Flux-Expressions, *submitted to Networks and Heterogeneous Media*.
165. G. CAVAGNARI, A. MARIGONDA, B. PICCOLI: Generalized dynamic programming principle and sparse mean-field control problems, *submitted to Journal of Mathematical Analysis and Applications*.
166. G. BRETTI, E. CRISTIANI, C. LATTANZIO, A. MAURIZI, B. PICCOLI: Two algorithms for a fully coupled and consistently macroscopic PDE-ODE system modeling a moving bottleneck on a road, *submitted to Engineering Mathematics*.
167. M. L. DELLE MONACHE, T. LIARD, A. RAT, R. STERN, R. BADHANI, B. SEIBOLD, J. SPRINKLE, D. WORK, B. PICCOLI: Feedback control algorithms for the dissipation of traffic waves with autonomous vehicles, *submitted to Springer volume "Computational Intelligence and Optimization Methods for Control Engineering", P. Pardalos et al. eds.*

Proceedings and book chapters

168. B. PICCOLI: Some control problems for the pendulum, *Proceedings of the 34th IEEE Conference on Decision and Control, pp. 3313-3318, New Orleans 1995*.
169. F. M. PAIT, B. PICCOLI: A hybrid controller for a nonholonomic system, *Proceedings of the 30th Conference on Information Sciences and Systems, pp. 416-420, Princeton 1996*.
170. A. BRESSAN, B. PICCOLI: A generic classification of time optimal planar stabilizing feedbacks, *Proceedings of the 36th IEEE Conference on Decision and Control, Vol. 2 pp. 1397-1402, San Diego 1997*.
171. B. PICCOLI: Hybrid systems and optimal control, *Proceedings of the 37th IEEE Conference on Decision and Control, Vol. 1 pp. 13-18, Tampa 1998*.
172. U. BOSCAIN, B. PICCOLI: Projection singularities of extremals for planar systems, *Proceedings of the 38th IEEE Conference on Decision and Control, Vol. 3 pp. 2936-2941, Phoenix 1999*.
173. B. PICCOLI: Necessary conditions for hybrid optimization, *Proceedings of the 38th IEEE Conference on Decision and Control, Vol. 1 pp. 410-415, Phoenix 1999*.
174. B. PICCOLI, H.J. SUSSMANN: Regular presynthesis and synthesis, and optimality of families of extremals, *Proceedings of the 38th IEEE Conference on Decision and Control, Vol. 4 pp. 3352-3357, Phoenix 1999*.
175. A. BICCHI, A. MARIGO, B. PICCOLI: Quantized control systems and discrete nonholonomy, *Proceedings of IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control, pp. 19-26, Princeton March 2000*.
176. P. BAITI, P.G. LEFLOCH, B. PICCOLI: BV stability via generalized characteristics for non-classical solutions of conservation laws, *Equadiff 99, Differential Equations, B. Fiedler, K. Groger and J. Sprekels eds., pp. 289-294, World Scientific, Singapore, 2000*.

177. A. BICCHI, A. MARIGO, B. PICCOLI: Reachability analysis for a class of quantized control systems, *Proceedings of the 39th IEEE Conference on Decision and Control*, Vol. 4 pp. 3963–3968, Sidney 2000.
178. G. ALBANO, C. D’APICE, B. PICCOLI: On stabilization performance, *Proceedings of the 39th IEEE Conference on Decision and Control*, Vol. 2 pp. 1388–1390, Sidney 2000.
179. A. BICCHI, A. BALLUCHI, B. PICCOLI, P. SOUERES: Stability and Robustness of Optimal Synthesis for Route Tracking by Dubins’ Vehicles, *Proceedings of the 39th IEEE Conference on Decision and Control*, Vol.1 pp. 581–586, Sidney 2000.
180. U. BOSCAIN, B. PICCOLI: Abnormal extremals for planar systems, *Proceedings of the 39th IEEE Conference on Decision and Control*, Vol. 1 pp. 575–580, Sidney 2000.
181. J.M. MERCIER, B. PICCOLI: On the Riemann problem for nonlinear elasticity, *Hyperbolic problems: theory, numerics and applications*, *Proceedings of HYP 2000*, H. Freistuhler and G. Warnecke eds., pp. 713–722, Birkhauser, Basel, 2001.
182. G. ALBANO, C. D’APICE, B. PICCOLI: Hybrid optimization for a car with gears, *Proceedings of MIC 2001 (ICARCV)*.
183. U. BOSCAIN, B. PICCOLI: Generic Planar Systems: Singularities of the Extremal Time, *Proceedings of the European Control Conference 2001*, pp. 1732–1737, Porto 2001.
184. F. PAIT, B. PICCOLI: Geometry of Adaptive Control, *Proceedings of the European Control Conference 2001*, pp. 2439–2442, Porto 2001.
185. A. MARIGO, B. PICCOLI: Safety driving of the Dubin’s car, *Proceedings of the 2002 IFAC International Conference on Automatic Control*, pp. 161–166, Barcellona 2002.
186. A. BICCHI, A. MARIGO, B. PICCOLI: A group-theoretic characterization of quantized control systems, *Proceedings of 41th IEEE Conference on Decision and Control*, Vol. 1 pp. 811–816, Las Vegas 2002.
187. B. PICCOLI: Hybrid Optimal Control, *Notes for CIRA corse, Bertinoro (Italy) 2003*.
188. M. GARAVELLO, B. PICCOLI: Hybrid necessary principles: an application to a car with gears, *Proceedings of IFAC Conference on Analysis and Design of Hybrid Systems*, pp. 253–258, Saint-Malo (France) 2003.
189. Y. CHITOUR, A. MARIGO, B. PICCOLI: Quantization of the rolling-body problem with applications to motion planning, *Proceedings of 42th IEEE Conference on Decision and Control*, Vol. 2 pp. 1345–1350, Maui (Hawaii) 2003.
190. A. BICCHI, A. MARIGO, B. PICCOLI: Encoding steering control with symbols, *Proceedings of 42th IEEE Conference on Decision and Control*, Vol. 4 pp. 3343–3348, Maui (Hawaii) 2003.
191. A. MARIGO, B. PICCOLI, D. VERGNI: Cooperative controls for car-like robot coordination, *Proceedings of 42th IEEE Conference on Decision and Control*, Vol. 4 pp. 3287–3292, Maui (Hawaii) 2003.
192. A. BICCHI, A. MARIGO, B. PICCOLI: Discrete and Hybrid Nonholonomy, *Proceedings of the International Workshop on "Hybrid Systems: Computation and Control" HSCC 2004, Lecture Notes in Computer Science*, vol. 2993, (2004), pp. 157–172.
193. Y. CHITOUR, A. MARIGO, B. PICCOLI: Time Optimal Control for Quantized Input Systems, *IFAC Symposium on Nonlinear Control Systems (NOLCOS)*, pp. 1289–1294, Stuttgart 1-3 September 2004.

194. B. PICCOLI, A. MARIGO: Model predictive control for portfolio optimization, *Proc. of 2nd IFAC Symposium on System, Structure and Control, Oaxaca December 2004*.
195. U. BOSCAIN, I. NIKOLAEV, B. PICCOLI: Classification of stable time-optimal controls on 2-D manifolds, *Proceedings of 43th IEEE Conference on Decision and Control, Vol.1 pp. 455–460, Bahamas 2004*.
196. F. CASTIGLIONE, B. PICCOLI: Optimal control in a model of dendritic cell transfection cancer immunotherapy, *Proceedings of 43th IEEE Conference on Decision and Control, Vol. 1 pp. 585–590, Bahamas 2004*.
197. A. AMADORI, C. D'APICE, R. MANZO, B. PICCOLI: Solution of Optimal Control Problems by Hybridization, *Proceedings of the 2005 IEEE International Symposium on Intelligent Control, Mediterrean Conference on Control and Automation, Vol. 1 pp. 1–7, Cyprus 2005*.
198. A. BRETTI, C. D'APICE, R. NATALINI, B. PICCOLI: Numerical approximations for traffic flow model for road networks, *Transactions of the XXV International Seminar on Stability problems for Stochastic Models 2005*.
199. C. D'APICE, R. MANZO, B. PICCOLI: A fluid dynamic model for packets flow on telecommunication networks, *Transactions of the XXV International Seminar on Stability problems for Stochastic Models 2005*.
200. V. BRUNI, B. PICCOLI, D. VITULANO: Wavelet Time-Scale Dependencies for Signal and Image Compression, *Proceedings of the 4th International Symposium on Image and Signal Processing and Analysis (ISPA05), pp. 105–110, Zagreb 2005*.
201. G. GARAVELLO, B. PICCOLI: Hybrid necessary principles, *Proceedings of 44th IEEE Conference on Decision and Control, pp. 723–728, San Diego 2005*.
202. A. MARIGO, B. PICCOLI: Optimal distribution coefficients for packets traffic on a telecommunication network, *Proceedings of 44th IEEE Conference on Decision and Control, pp. 1074–1079, San Diego 2005*.
203. A. AGOSTINI, A. BALLUCHI, A. BICCHI, B. PICCOLI, A. SANGIOVANNI-VINCENTELLI, K. ZADARNOWSKA: Randomized algorithms for platform-based design, *Proceedings of 44th IEEE Conference on Decision and Control, pp. 6638–6643, San Diego 2005*.
204. F. CASTIGLIONE, B. PICCOLI: Optimal control methods for immunotherapy, *Proceedings of Control Systems: Theory, Numerics and Applications (Rome 2005), <http://pos.sissa.it>, 2006*.
205. A. BICCHI, A. MARIGO AND B. PICCOLI: Improving efficiency of finite plans by optimal choice of input sets, *Proc. of the Int. Workshop on "Hybrid Systems: Computation and Control" HSCC 2006, Springer Lecture Notes in Computer Science 3927, pp. 108–122, Springer, 2006*.
206. A. BICCHI, A.FAGIOLINI, L. GRECO, A. MARIGO AND B. PICCOLI: Symbolic control for underactuated flat systems, *Proceedings 2006 IEEE International Conference on Robotics and Automation, pp. 1649–1654, Orlando FL 2006*.
207. B. PICCOLI: Control Problems in Mathematical Physics, *Encyclopedia of Mathematical Physics by J. P.Franoise, G. Naber, Sheung Tsun Tsou, 2006, 636-642*.
208. E. GIREJKO, B. PICCOLI: On generalized differential quotients and other generalized differentials, *Proceedings of CAO, 2006*.
209. I. CORRO RAMOS, B. PICCOLI: Dead-locks and break of symmetry in robot coordination, in *"Taming Heterogeneity and Complexity of Embedded Control Systems, F. Lamnabhi-Lagarrigue, S. Laghrouche, A. Loria and E. Panteley eds., Proceedings of CTS-HYCON Workshop, 2006*.

210. V. BRUNI, B. PICCOLI, D. VITULANO: Signal and Image Denoising via Scale-Space Atoms, *Proceedings of 14th European Signal Processing Conference (EUSIPCO06), Florence - Italy, September 2006.*
211. A. BICCHI, A. FAGIOLINI, L. GRECO, B. PICCOLI: Steering Dynamical Systems with Finite Plans and Limited Path Length, *Proceedings of European Control Conference 2007.*
212. P. MASON, M. BROUCKE, B. PICCOLI: Time Optimal Swing-Up of the Planar Pendulum, *Proceedings of the 46th IEEE Conference on Decision and Control 2007, pp. 5389-5394, New Orleans 2007..*
213. A. BALLUCCHI, C. D'APICE, M. GAETA, B. PICCOLI: Equilibria and feedback for a hybrid model of idle speed control, *Proceedings of IEEE AFRICON 07, pp. 1-8, Pretoria 2007.*
214. M.GARAVELLO, E.GIREJKO, B. PICCOLI: Generalized differentiation of parameterized families of trajectories, in "Geometric Control and Nonsmooth Analysis", *Series on Advances in Mathematics for Applied Sciences, pp. 177-205, Worldscientific Publishing, 2008.*
215. V. BRUNI, B. PICCOLI, D. VITULANO: A Fast Scheme for Multiscale Signal Denoising, *Proceedings of the 5th International Conference, ICIAR 2008, Povia de Varzim, Portugal, June 25-27, 2008, pp. 23-32, Springer LNCS 5112, 2008.*
216. V. BRUNI, B. PICCOLI, D. VITULANO: Following edges along scales, *Proceedings of the IASTED International Conference VIIP 2008, pp. 214-219, Palma de Mallorca, September 2008..*
217. A. BICCHI, N. DUBBINI, B. PICCOLI: Left invertibility of discrete time systems with finite inputs and quantized output, *Proceedings of the 47th IEEE Conference on Decision and Control (CDC 2008), pp. 4687-4692, Cancun (Mexico) 2008.*
218. L. GRECO, M. GAETA, B. PICCOLI: Deployment of sensors in a network-like environment, *Proceedings of the 47th IEEE Conference on Decision and Control (CDC 2008), pp. 4257-4262, Cancun (Mexico) 2008.*
219. M. GARAVELLO, R. NATALINI, B. PICCOLI, A. TERRACINA: A Riemann solver approach for conservation laws with discontinuous fluxes, in *Hyperbolic problems: theory, numerics, applications, 1029-1036, Springer, Berlin, 2008.*
220. B. PICCOLI, A. TOSIN: A Review Of Continuum Mathematical Models Of Vehicular Traffic, *Encyclopedia of Complexity and Systems Science, Robert A. Meyer ed., Springer, June 2009.*
221. M. GARAVELLO AND B. PICCOLI: Riemann solvers for conservation laws at a node, in "Hyperbolic problems: Theory, Numerics and Applications, E. Tadmor, J.-G. Liu, A.E. Tzavaras eds., *Proceedings of Symposia in Applied Mathematics Vol. 67, American Mathematical Society, 2009, pp. 595-604.*
222. B. PICCOLI: Flows on networks and complicated domains, in "Hyperbolic problems: Theory, Numerics and Applications, E. Tadmor, J.-G. Liu, A.E. Tzavaras eds., *Proceedings of Symposia in Applied Mathematics Vol. 67, American Mathematical Society, 2009, pp. 135-160.*
223. C. LATTANZIO, A. MAURIZI, B. PICCOLI: Modeling and simulation of vehicular traffic flow with moving bottlenecks, *Proceedings of MASCOT 08, IMACS series in Computational and Applied Mathematics, Vol. 14, 2009.*
224. S. BLANDIN, D. WORK, P. GOATIN, B. PICCOLI AND A. BAYEN: A general phase transition model for vehicular traffic, *2009 IFAC workshop on Control of Distributed Parameter Systems, Toulouse, France, July 20-24 2009.*

225. S. KOWALEWSKI, M. GARAVELLO, H. GUEGUEN, G. HERBERICH, R. LANGERAK, B. PICCOLI, J.W. POLDERMAN, C. WEISE: Hybrid automata, in *Handbook of hybrid systems control control : theory, tools, applications*, J. Lunze and F. Lamnabhi-Lagarrigue eds., 57–85, Cambridge Univ. Press, Cambridge, 2009.
226. S. BLANDIN, D. WORK, P. GOATIN, B. PICCOLI, A. BAYEN: A class of perturbed cell-transmission models to account for traffic variability, *89th Annual Meeting of the Transportation Research Board*, 2010.
227. E. CRISTIANI, B. PICCOLI, A. TOSIN: Macroscopic and microscopic self-organization by nonlocal anisotropic interactions, in *Mathematical Modeling of Collective Behavior in Socio-Economic and Life Sciences*, G. Naldi et al. eds., pp. 337–364, Birkhäuser Boston, 2010.
228. C. D’APICE, R. MANZO, B. PICCOLI: Optimization of Traffic Behavior via Fluid Dynamic Approach, In *”Urban Transport and Hybrid Vehicles”*, edited by Seref Soylu, ISBN 978-953-307-100-8, Scyio, 2010.
229. B. PICCOLI: Optimal syntheses for state constrained problems and optimization of cancer therapies, *Proceedings of the 49th IEEE Conference on Decision and Control (CDC 2010)*, pp. 7033–7038, Atlanta, Georgia, USA.
230. C. D’APICE, R. MANZO, B. PICCOLI: Continuum-discrete models for supply chains and networks, in *Supply Chain Management, InTech*, ISBN 978-953-307-184-8, 487-514, 2011.
231. C. D’APICE, R. MANZO, B. PICCOLI: Simulation and Optimal Routing of Data Flows Using a Fluid Dynamic Approach, in *Telecommunications Networks - Current Status and Future Trends, InTech*, ISBN 978-953-51-0341-7, edited by Jesus Hamilton Ortiz, 2012.
232. E. CRISTIANI, B. PICCOLI, A. TOSIN: How Can Macroscopic Models Reveal Self-Organization in Traffic Flow?, *Proceedings of 51st IEEE Conference on Decision and Control (CDC 2012)*, pp. 6989–6994, Maui (Hawaii) 2012.
233. F. PRODI, P. SALVAREZZA, M. TEGLIA, B. DE FILIPPO, M. PAPI, B. PICCOLI: Stochastic systems based modeling for radar environmental simulator, *Polaris (Selex SI)*, Rome, 2012.
234. S. BLANDIN, P. GOATIN, B. PICCOLI, A. BAYEN, D. WORK: A general phase transition model for traffic flow on networks, *Proceedings of EWGT 2012, Procedia Social and Behavioral Sciences*, pp. 1–10, 2012.
235. B. PICCOLI, K. HAN, T.L. FRIESZ, T. YAO: Second order models and traffic data from GPS, *Proceedings of the Eighth Triennial Symposium on Transportation Analysis (TRISTAN VIII)*, San Pedro de Atacama (Chile) 2013.
236. B. PICCOLI, K. HAN, T.L. FRIESZ, T. YAO: Estimating fuel consumption and emissions via traffic data from mobile sensors, *Proceedings of the 2013 51st Annual Allerton Conference on Communication, Control, and Computing*, pp. 472–477, Allerton IL 2013.
237. M. CHYBA, S. GRAMMATICO, V.T. HUYNH, J. MARRIOTT, B. PICCOLI, R.N. SMITH: Reducing actuator switchings for motion control of autonomous underwater vehicles, *Proceedings of American Control Conference 2013*, pp. 1406–1411, Washington 2013.
238. B. PICCOLI, F. ROSSI: Control of multiscale model for social dynamics, *Proceedings of the American Control Conference 2014*, pp. 2202–2207, Portland, OR, 2014.
239. M. FORNASIER, N. POURADIER DUTEIL, B. PICCOLI, F. ROSSI: Mean-field optimal control by leaders, *Proceedings of the IEEE Conference on Decision and Control 2014*, Los Angeles, CA.

240. B. PICCOLI, F. ROSSI, E. TRELAT: Control of the 1D continuous version of the Cucker-Smale model, *Proceedings of the American Control Conference 2015, Chicago, IL, 2015*.
241. K. AZER, J.E. MING, T. NGUYEN, A. KOSZYCKI, M. VARSHNEYA, B. GOEBEL, N. DJEBLI, P. BANERJEE, D.W. BARTLETT, M. REED, B. PICCOLI, S. MCQUADE, E. RIBES, J. BARRETT: Enhancing the Utility of Systems Pharmacology Modeling in Pharmaceutical R&D: Lessons from the development of a PCSK9 Inhibitor Model, *in Proceedings of the American Conference on Pharmacometrics 2015, Journal of Pharmacokinetic Pharmacodyn (2015) 42(Suppl 1): 11*.
242. N. POURADIER DUTEIL, F. ROSSI, U. BOSCAIN, B. PICCOLI: Developmental partial differential equations, *Proceeding of the Conference on Decision and Control 2015, pp. 3181–3186, Osaka, Japan*.
243. U. BOSCAIN, B. PICCOLI: Synthesis theory in optimal control, *in Encyclopedia of Systems and Control, J. Baillieul and T. Samad Eds., Springer-Verlag, London, 2015*.
244. STERN, R. AND WORK, D. AND CUI, S. AND POHLMANN, H. AND SEIBOLD, B. AND DELLE MONACHE, M. L. AND PICCOLI, B. AND SPRINKLE, J.: Stabilizing traffic with a single autonomous vehicle, *in Proceedings of the 7th International Conference on Cyber-Physical Systems, 2016*.
245. M.L. DELLE MONACHE, B. PICCOLI, F. ROSSI: Outflow tracking with variable speed limit, *Proceedings of the American Control Conference 2016, Boston, MA, 2016*.
246. B. PICCOLI, F. ROSSI, E. TRELAT: Sparse control of second-order cooperative systems and partial differential equations to approximate alignment, *Proceedings of the 22nd International Symposium on Mathematical Theory of Networks and Systems, Minneapolis, MN, 2016*.
247. S. BLANDIN, X. LITRICO, M.L. DELLE MONACHE, B. PICCOLI, A.M. BAYEN: Regularity and Lyapunov stabilization of weak entropy solutions to scalar conservation laws, *Proceedings of the 22nd International Symposium on Mathematical Theory of Networks and Systems, Minneapolis, MN, 2016*.
248. B. PICCOLI, F. ROSSI, E. TRELAT: Sparse kinetic Jurdjevic-Quinn control for mean-field equations, *Proceedings of the IEEE Conference on Decision and Control 2016, Las Vegas, NV, 2016*.
249. F. ROSSI, N. POURADIER DUTEIL, N. YAKOBY, B. PICCOLI: Control of reaction-diffusion equations on time-evolving manifolds, *Proceedings of the IEEE Conference on Decision and Control 2016, Las Vegas, NV, 2016*.
250. M. CAPONIGRO, F. ROSSI, N. B. PICCOLI, E. TRELAT: Sparse feedback stabilization of multi-agent dynamics, *Proceedings of the IEEE Conference on Decision and Control 2016, Las Vegas, NV, 2016*.
251. F. WU, R. STERN, M. CHURCHILL, M.L. DELLE MONACHE, K. HAN, B. PICCOLI, D. WORK: Fuel consumption in oscillatory traffic: experimental results, *Proceedings of the 96th Annual Meeting of the Transportation Research Board, 2017*.
252. G. CAVAGNARI, A. MARIGONDA, B. PICCOLI: Superposition principle for differential inclusions, *to appear on Springer Series Lecture Notes in Computer Science (LNCS) as Proceedings of the 11th International Conference on Large-Scale Scientific Computations (LSSC'17) June 5 - 9, 2017, Sozopol, Bulgaria*.
253. A. AYDOGDU, M. CAPONIGRO, S. MCQUADE, B. PICCOLI, N. POURADIER DUTEIL, F. ROSSI, E. TRELAT: Interaction Network, State Space and Control in Social Dynamics, *in "Active Particles Volume 1. Advances in Theory, Methods, and Applications", pp. 99–140, N. Bellomo, P. Degond, and E. Tadmor Eds., Birkhauser-Springer, 2017*.

254. S. CANIC, M.L. DELLE MONACHE, B. PICCOLI, J.M. QIU, J. TAMBACA: Numerical methods for hyperbolic nets and networks, in *Handbook of numerical methods for hyperbolic problems*, 435–463, *Handb. Numer. Anal.*, 18, Elsevier North-Holland, Amsterdam, 2017.
255. S. HAMMOND, A. RAT, M.L. DELLE MONACHE, B. PICCOLI: Operational performance of a double-lane roundabout with additional lane length design: Lighthill-Whitham-Richards model analysis, *Proceedings of the 97th Annual Meeting of Transportation Research Board*, 2018.
256. B. PICCOLI, N. POURADIER DUTEIL, E. TRELAT: Sparse control to prevent Black Swan clustering in collective dynamics, *to appear on Proceedings of the American Control Conference 2018, Milwaukee, WI, 2018*.
257. SEAN MC QUADE, ZHEMING AN, NATHANIAL MERRILL, RUTH ABRAMS, KARIM AZER, BENEDETTO PICCOLI: Equilibria for Large Metabolic Systems and the LIFE Approach, *to appear on Proceedings of the American Control Conference 2018, Milwaukee, WI, 2018*.
258. M.L. DELLE MONACHE, S. HAMMOND, B. PICCOLI: Riemann solver for a macroscopic double-lane roundabout model, *to appear on Proceedings of the IFAC Conference on Control of Transportation System, Savona, Italy, June 2018*.
259. R. BHADANI, B. PICCOLI, B. SEIBOLD, J. SPRINKLE, D. WORK: Dissipation of Emergent Traffic Waves in Stop-and-Go Traffic Using a Supervisory Controller, *to appear on Proceedings of the 57th IEEE Conference on Decision and Control 2018*.
260. B. PICCOLI: Measure Differential Inclusions, *to appear on Proceedings of the 57th IEEE Conference on Decision and Control 2018*.