



**Europass  
Curriculum Vitae**

**Personal information**

First name / Surname **Francesca Bucci**  
Address Dipartimento di Matematica e Informatica  
Università degli Studi di Firenze  
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Nationality Italian  
Gender Female

**Work experience**

Dates From 23 Dec. 2011  
Occupation or position held Associate Professor in *Mathematical Analysis*  
Main activities and responsibilities Teaching and research on topics within the broad area of Mathematical Analysis.  
Research specifically focused on: *Analysis and Control of evolutionary Partial Differential Equations*  
Name and address of employer Università degli Studi di Firenze  
Type of business or sector Public Higher Education

Dates From Nov. 1994 to Dec. 2011  
Occupation or position held Researcher (Assistant Professor, permanent position) in *Mathematical Analysis*  
Main activities and responsibilities Teaching and research on topics within the broad area of Mathematical Analysis  
Name and address of employer Università degli Studi di Firenze, School of Engineering and Dipartimento di  
Matematica Applicata until (its closure) December 2010; since then within the  
Dipartimento di Sistemi e Informatica  
Type of business or sector Public Higher Education

Dates From Nov. 1990 to Nov. 1994  
Occupation or position held Researcher (Assistant Professor) in *Mathematical Analysis*  
Main activities and responsibilities Teaching and research on topics within the broad area of Mathematical Analysis  
Name and address of employer Università degli Studi di Modena, School of Mathematical Physical and Natural  
Sciences and Dipartimento di Matematica Pura e Applicata  
Type of business or sector Public Higher Education

**Parental leave**

Dates From 18 Nov. 2003 to 10 June 2004 (second maternity leave)

Dates From 11 Apr. 2000 to 3 Nov. 2000 (first maternity leave)

### Education and training

Dates From Nov. 1988 to Nov. 1992

Title of qualification awarded Ph.D. In Mathematics

Principal subjects/occupational skills covered Thesis title: "Some results on control of Partial Differential Equations"  
Advisor: Giuseppe Da Prato (Scuola Normale Superiore, Pisa)

Name and type of organisation providing education and training Università di Pisa, Italy

Dates From Nov. 1987 to Oct. 1988

Title of qualification awarded Fellowship of the Istituto Nazionale di Alta Matematica (IndAM)

Principal subjects/occupational skills covered Programme comprising various courses on different subjects of Mathematics (at Master's or graduate level), each followed by a final examination

Name and type of organisation providing education and training Università degli Studi di Firenze (on behalf of the INdAM)

Dates June 1987

Title of qualification awarded *Laurea* (Master of Science degree) In Mathematics

Principal subjects/occupational skills covered Thesis title: "Soluzioni periodiche dell'equazione di Liénard generalizzata"  
Advisor: Roberto Conti (Università degli Studi di Firenze)

Name and type of organisation providing education and training Università degli Studi di Firenze, Italy

### Fellowships, Awards

"Research in Pairs" Programme, Centro di Ricerca Matematica Ennio De Giorgi, Pisa (February 2008)

NATO-CNR Senior Fellowships Programme (1999), to support research at the Department of Mathematics of University of Virginia (Apr.-June 2001)

Grant of the Scuola di Dottorato di Ricerca (PhD) in Mathematics of the Università di Pisa (1988-1990)

Fellowship of the Istituto Nazionale di Alta Matematica (Academic Year 1987/88)

1989 Premio di Laurea "Giovanni Sansone" for a tesi (MSc thesis) on *Ordinary Differential Equations* (not assigned): received an award, along with one million of Italian lire

Scholarship of the C.N.R. (Italian National Research Council): Firenze, 1987

### Research interests

- Mathematical analysis of initial/boundary value problems for evolutionary Partial Differential Equations (PDE), particularly for systems of coupled hyperbolic/parabolic PDE, such as thermoelastic systems, models for acoustic-structure or fluid-structure interactions: well-posedness, interior/boundary regularity of the corresponding solutions;
- Optimal control problems with quadratic functionals for (linear) evolutionary PDE and composite systems of PDE, with boundary/interface control; differential and algebraic (operator) Riccati equations;
- Long-time behaviour of solutions to linear and nonlinear PDEs:
  - uniform stability (or stabilizability), decay rates – via energy methods and frequency domain techniques;
  - existence of global attractors, along with their structure (fractal dimension, regularity, etc.);
- The LQ-problem with non coercive cost functionals.

**Personal skills and competences**

Mother tongue(s) Italian

Other language(s)

Self-assessment

European level (\*)

**English**

**French**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C2	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
A2	Basic user	A2	Basic user	A2	Basic user				

**Scientific Activities, I.  
Visiting Appointments**

Georgetown University, Department of Mathematics and Statistics (Fall 2020, two weeks), invited by Matthias Eller (*postponed*, owing to SARS-CoV-2 situation)

University of Nebraska-Lincoln, Department of Mathematics (Mar. 2015, one week), invited by George Avalos

SISSA-ISAS, Trieste (May 2011, two weeks), within the trimester "Hyperbolic PDEs, Dispersive and Transport Equations"

Karl-Franzens-Universität Graz, Institut fuer Mathematik und Wissenschaftliches Rechnen (27-29 Oct. 2010), invited by Barbara Kaltenbacher; held a Guest Lecture within the Series "Excellent women in Mathematics"

Centre Émile Borel of the Institut Henri Poincaré (IHP), Université Paris VI, within the trimester *Contrôle d'Équations aux Dérivées Partielles et Applications* (November 2010), and within the trimester *Théorie du contrôle et applications* (Mar. 1998).

Centro di Ricerca Matematica Ennio De Giorgi of the Scuola Normale Superiore di Pisa (Feb. 2008, two weeks circa): *Senior Visitor*, within the programme *Research in Pairs*, with Daniel Toundykov (Univ. of Nebraska-Lincoln).

University of Virginia, Department of Mathematics (Apr.-June 2001, two months): *Visiting Fellow*, as an awardee of a NATO-CNR Senior Fellowship.

**Scientific Activities, II.  
Invited talks/lectures**

F. Bucci has given numerous (around sixty) *invited* talks/lectures in Italian and foreign scientific Institutions, within national and international workshops held in various countries including France, Spain, Germany, UK, Austria, Romania, Poland, Morocco, India, USA, Canada, besides Italy.  
(The ones pertaining to the last five years are listed below.)

- 2020** (forthcoming) INdAM Workshop “*Analysis and Numerics of Design, Control and Inverse problems*”, Istituto Nazionale di Alta Matematica, Roma, July 13-17, 2020 (postponed to 28 June-2 July 2021, owing to the SARS-CoV-2 situation)
- (forthcoming) Workshop “*Mathematical models in applied sciences – in honour of Paola Loreti*”, Sapienza Università di Roma, Mar. 26-27, 2020 (deferred, owing to the SARS-CoV-2 situation)
- Workshop “*Controllabilità di PDE in modelli fisici e scienze della vita*”, Univ. di Roma “Tor Vergata”, Feb. 27-28, 2020
- 2019** Special Session “*Problemi diretti e inversi per equazioni di evoluzione*” (organized by Giuseppe Floridia (Napoli Federico II) and Silvia Romanelli (Bari)), within the XXI Congresso dell’Unione Matematica Italiana, Pavia, Sept. 2-7, 2019
- Minisymposium “*Nonlinear acoustics: analytical and numerical aspects*” (organized by Barbara Kaltenbacher (Klagenfurt, AT), Marta Pellicer (Girona, ES), Mechthild Thalhammer (Innsbruck, AT)), within the International Congress on Industrial and Applied Mathematics (ICIAM2019), Valencia, July 15-19, 2019
- 2018** Workshop “*Analysis, Control and Inverse Problems for PDEs*” (organized by Giuseppe Floridia (Napoli Federico II), Roberto Guglielmi (Gran Sasso Science Institute, L’Aquila), Cristina Pignotti (L’Aquila)), within the French-German-Italian Laboratoire International Associé on Applied Analysis (LIA-COPDESC), Napoli, Accademia Pontaniana, Nov. 26-30, 2018
- Minisymposium “*Honoring the work of Igor Chueshov*” (organized by Irena Lasiecka (Univ. Memphis) and Justin Webster (Univ. Maryland, Baltimore County)), within the 28th IFIP TC7 Conference on System Modelling and Optimization (organized by Christian Clason, Arnd Roesch, Gerhard Starke, Irwin Yousept (UniDuisburg-Essen), and Christian Meyer (TU Dortmund)), Universitaet Duisburg-Essen, DE, July 23-27, 2018
- Minisymposium “*Control and inverse problems for evolution equationns*” (organized by Giuseppe Floridia (Napoli Federico II), within SIMAI 2018 (bi-annual congress of the Italian Society of Applied and Industrial Mathematics), Sapienza Università di Roma, July 2-6, 2018
- Meeting “*New trends in control of evolution systems*” (organized by Roberto Guglielmi (GSSI, L’Aquila) and Piermarco Cannarsa (Roma Tor Vergata)), Gran Sasso Science Institute L’Aquila, Apr. 20-21, 2018
- 2017** Workshop “*Women in Control: New Trends in Infinite Dimensions*” (organized by Luz de Teresa (Universidad Nacional Autonoma de Mexico), Kirsten Morris (University of Waterloo, CA), Irena Lasiecka (University of Memphis, USA)), Banff International Research Station, Banff, Alberta (CA), July 16-21, 2017
- Workshop “*Partial Differential Equations and Applications*” (organized by Angelo Favini (Università di Bologna), Genni Fragnelli (Università di Bari), Luca Lorenzi (Università di Parma)), Università di Bologna, May 22-26, 2017
- 2016** Minisymposium “*Differential models in applications to nonlinear media: memory and biological materials*” (organized by Daniele Andreucci and Sandra Carillo (Sapienza Univ. di Roma)), within the 7th European Congress of Mathematics, Technische Universitaet Berlin, July 18-22, 2016
- INdAM Meeting “*Optimal Control for Evolutionary PDEs and Related Topics*” (organized by Pierluigi Colli (Univ. di Pavia), Angelo Favini (Univ. di Bologna), Elisabetta Rocca (Univ. di Pavia), Jurgen Sprekels (Humboldt Univ., Berlin)), Palazzone di Cortona, June 20-24, 2016
- 2015** Workshop on “*New advances in PDE’s, Inverse Problems and Control Theory*” (organized by Angelo Favini (Univ. di Bologna), Genni Fragnelli (Univ. di Bari), Luca Lorenzi (Univ. di Parma)), Università degli Studi di Parma, July 6-10, 2015

Minisymposium "Wellposedness, control, and observability theories for partial differential equations" (organized by George Avalos (Univ. Nebraska-Lincoln), Scott Hansen (Iowa State Univ.), Daniel Toundykov (Univ. of Nebraska-Lincoln)), within the 27<sup>th</sup> IFIP TC7 Conference 2015 on System Modeling and Optimization, Université Nice-Sophia Antipolis, 29 June–3 July 2015

GDRE ConEDP-GSSI Workshop on "Control of Partial Differential Equations" (organized by Fatiha Alabau-Boussouira (Univ. de Lorraine), Piermarco Cannarsa (Univ. di Roma Tor Vergata), Pierangelo Marcati (Univ. dell'Aquila)), Gran Sasso Science Institute (GSSI), L'Aquila, Apr. 22-24, 2015

Workshop "Control Theory and Related Topics" (organized by Fulvia Confortola, Monica Conti, Giuseppina Guatteri, Elsa Maria Marchini (PoliMI)), Politecnico di Milano, Dipartimento di Matematica, Apr. 12-13, 2015

Special Session on "Nonlinear Partial Differential Equations in Sciences and Engineering" (organized by Lorena Bociu (North Carolina State Univ.), Ciprian Gal (Florida International Univ.), Daniel Toundykov (Univ. of Nebraska)), within the Northeastern Spring Sectional Meeting of the American Mathematical Society, Georgetown University, Washington DC, Mar. 7-8, 2015

## Professional activities. Service to UniFI

### Academic libraries

Member of the *Comitato Scientifico della Biblioteca di Scienze* (representative for the Dipartimento di Matematica e Informatica, since Nov. 2018)

### Comitato Unico di Garanzia per le Pari Opportunità, etc. (Equal opportunities)

Invited speaker at: Pillole di parità. La femminilizzazione delle professioni tra cambiamenti sociali e stereotipi. *Matematica, Informatica, Architettura e Ingegneria: sostantivi femminili*, Università degli Studi di Firenze, 15 Mar. 2021

Proofreader/reviewer for the *Bilancio di genere 2018* of the Università degli Studi di Firenze

Invited participant at: La vita emotiva dell'accademia. Presentation/reading of "*Feeling Academic in the Neoliberal University*", edited by Yvette Taylor and Kinneret Lahad, Palgrave-Macmillan, Basingstoke 2018; Università degli Studi di Firenze, 20 Mar. 2019

Invited speaker at: Generi e accademia a partire da noi, Università degli Studi di Firenze, 28 Feb. 2019 (Title of the talk: "*È questa un'accademia per matematiche? (giovani o meno)*")

### Degree Programme in Civil and Environmental Engineering

Member of the *Comitato per la Didattica*, Corso di Studio in Ingegneria Civile Edile Ambientale (from Dec. 2012 to Dec. 2019)

Coordinator of the (working group) Gruppo di lavoro "Matematica/Probabilità e Statistica", CdS Ingegneria Civile Edile Ambientale (since May 2012, during the transition from three distinct (BS) degree programmes to a unique one, and during few subsequent years)

## Scientific activities, III. Organization of meetings

Organizer of workshops held in Italian and foreign scientific Institutions such as the Ecole Nationale Supérieure de Mines de Paris, Sophia Antipolis (France), the Imperial College London (UK), the Technische Universität Berlin (Germany), the Alpen-Adria Universität Klagenfurt (Austria), the Universidad Autónoma de Madrid and the Universidad del País Vasco (Spain), the IMPA (Brazil), the Università di Pisa and the Politecnico di Torino (Italy), besides the Università degli Studi di Firenze; see below.

- 2020** (forthcoming) "Analysis, Control and Inverse problems for Partial Differential Equations", Minisymposium within the 8th European Congress of Mathematics (8ECM), Portorož, Slovenia, 5-11 July 2020 (postponed to 20-26 June 2021).  
Organized with Barbara Kaltenbacher (Alpen-Adria Univ. Klagenfurt, AT)
- 2019** "Incontri di Analisi Matematica tra Firenze Pisa e Siena" ([MathAnalysis@UniFiPisI](mailto:MathAnalysis@UniFiPisI)), a series of one-day workshops: the first one held at the Dipartimento di Matematica e Informatica of the Università degli Studi di Firenze on May 17, 2019; the second one held at the Dipartimento di Matematica of the Univ. di Pisa on Nov. 22, 2019; the third one held online on Oct. 30, 2020.  
Promoted and organized with: Andrea Colesanti (Firenze), Giovanni Bellettini (Siena), Elisabetta Chiodaroli, Emanuele Paolini and Nicola Visciglia (Pisa)
- 2018** "Paths in Mathematical Control theory", a Workshop on the occasion of Andrea Bacciotti's and Luciano Pandolfi's 70th birthdays, Politecnico di Torino, Feb. 26-27, 2018.  
Organized with: Francesca Ceragioli, Giuseppe Calafiore, Fabio Fagnani, Luisa Mazzi (Politecnico di Torino), Giacomo Como (Politecnico di Torino and Lunds Universitet), Chiara Ravazzi (Consiglio Nazionale delle Ricerche, IEIT)
- 2017** International Conference "New Directions in Nonautonomous Dynamical Systems", Università degli Studi di Firenze, Jan. 31-Feb. 3, 2017.  
Co-organized as a member of the Local Organizing Committee.  
Scientific Organizing Committee: Roberta Fabbri (Firenze), Matteo Franca (Università Politecnica delle Marche), Carmen Nunez (Valladolid, ES), Maria Patrizia Pera (Firenze), Genevieve Raugel (Paris-Sud, FR), Yingfei Yi (Alberta, CA), Luca Zampogni (Perugia)
- 2016** "Control and Asymptotics of Nonlinear PDE Dynamics", Special Session (S19) within the First Joint Meeting Brazil-Italy in Mathematics, IMPA, Rio de Janeiro, Aug. 29-Sept. 2, 2016.  
Co-organized with: Alexandre N. de Carvalho (Universidade de Sao Paulo) and Elisabetta Rocca (Pavia)
- 2014** "Analysis and control of nonlinear partial differential equation evolution systems", Special Session within the 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Universidad Autónoma de Madrid, July 7-11, 2014.  
Organized with: Lorena Bociu (North Carolina State University) and George Avalos (University of Nebraska-Lincoln)  
"PDE methods and challenges in control and inverse problems", Special Session within the First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI, Universidad del País Vasco, Bilbao, June 30-July 4, 2014.  
Organized with: Manuel Gonzalez Burgos and Enrique Fernandez-Cara (Universidad de Sevilla)
- 2013** "Mathematical Modeling of Physical Phenomena", Minisymposium within the 26th IFIP TC7 Conference 2013 on System Modeling and Optimization, Alpen-Adria Universität Klagenfurt, AU, Sept. 9-13, 2013.  
Organized with Daniel Toundykov (University of Nebraska-Lincoln)  
"Novel directions in control of evolutionary PDE problems", Minisymposium within the 26th IFIP TC7 Conference 2013 on System Modeling and Optimization, Alpen-Adria Universität Klagenfurt, AU, Sept. 9-13, 2013.  
Organized with George Avalos (University of Nebraska-Lincoln)

- 2011** "Analysis and control of composite PDE systems: new challenges and methods, I-V", five Minisymposia within the 25<sup>th</sup> IFIP TC7 Conference 2011 on System Modeling and Optimization, Technische Universitaet Berlin, Sept. 12-16, 2011.  
Organized with Daniel Toundykov (Univ. of Nebraska-Lincoln)
- 2009** "Analysis and optimisation of nonlinear evolutionary systems", Special Session within the 7th ISAAC Congress, Imperial College London, July 13-18, 2009.  
Organized with Irena Lasiecka (University of Virginia)
- 2005** "Analysis and Optimization of Systems modelled by PDEs", Invited Session within the 22nd IFIP TC7 Conference on System Modeling and Optimization, Politecnico di Torino, July 18-22, 2005.  
Organized with George Avalos (Univ. of Nebraska-Lincoln)
- 2003** of the Minisymposium  
"Analysis and Control of systems governed by PDEs", within the 21st IFIP TC7 Conference on System Modeling and Optimization, Ecole Nationale Supérieure de Mines de Paris, Sophia Antipolis, FR, July 21-25, 2003.  
Organized with: George Avalos (Univ. of Nebraska-Lincoln) and Catherine Lebedzik (Pole Universitaire Leonard de Vinci, Paris -- then, now WSU Michigan)

#### Scientific Activities, IV. Editorial duties

Reviewer for the following international journals:  
*Communications in Contemporary Mathematics, Journal of the European Mathematical Society, Journal of Differential Equations, Journal of Mathematical Fluid Mechanics, Applied Mathematics and Optimization, Discrete and Continuous Dynamical Systems (e DCDS-S, DCDS-B), SIAM Journal on Applied Mathematics, Nonlinear Analysis, Applicable Analysis, Nonlinear Differential Equations and Applications (NoDEA), Communications on Pure and Applied Analysis, SIAM Journal on Control and Optimization, Journal of Mathematical Analysis and Applications, Zeitschrift für Angewandte Mathematik und Physik, Mathematical Methods in the Applied Sciences, Control & Cybernetics, The Quarterly Journal of Mechanics & Applied Mathematics, IEEE Transactions on Automatic Control.*

#### Scientific Activities, V. Publications

##### Preprints (arXiv e-prints, subject to endorsement)

- 35.** P. Acquistapace, F. Bucci, Uniqueness for Riccati equations with unbounded operator coefficients, *arXiv e-prints*, page [arXiv:2012.05670](https://arxiv.org/abs/2012.05670), Dec. 2020; *submitted*
- 34.** F. Bucci, M. Eller, The Cauchy-Dirichlet problem for the Moore-Gibson-Thompson equation, *arXiv e-prints*, page [arXiv:2004.11167](https://arxiv.org/abs/2004.11167), Apr. 2020; *submitted*

##### Journal articles, Book chapters, Postprints (subject to peer review)

- 33.** F. Bucci, Improved boundary regularity for a Stokes-Lamé system, *Evol. Equ. Control Theory*, doi: [10.3934/eect.2021018](https://doi.org/10.3934/eect.2021018); see *arXiv e-prints*, page [arXiv:2009.04905](https://arxiv.org/abs/2009.04905), Sept. 2020
- 32.** F. Bucci, L. Pandolfi, On the regularity of solutions to the Moore-Gibson-Thompson equation: a perspective via wave equations with memory, *J. Evol. Equ.* **20** (2020), 837-867 (Published online: 19 Nov. 2019). DOI: <https://doi.org/10.1007/s00028-019-00549-x>
- 31.** F. Bucci, I. Lasiecka, Feedback control of the acoustic pressure in ultrasonic wave propagation, *Optimization* **68** (2019), no. 10, 1811-1854 (Published online: 19 Aug 2018). DOI: [10.1080/02331934.2018.1504051](https://doi.org/10.1080/02331934.2018.1504051)

- 30.** G. Avalos, F. Bucci, Rational rates of uniform decay for strong solutions to a fluid-structure PDE system, *J. Differential Equations* **258** (2015), no. 12, 4398-4423.
- 29.** G. Avalos, F. Bucci, Exponential decay properties of a mathematical model for a certain fluid-structure interaction, in: *New Prospects in Direct, Inverse and Control Problems for evolution equations*, Favini A., Fragnelli G., Mininni R. (Eds.), *Springer INdAM Series* Vol. 10, 45-73, Springer Verlag, 2014, XII, 471 p. 37 illus.
- 28.** P. Acquistapace, F. Bucci, I. Lasiecka, A theory of the infinite horizon LQ-problem for composite systems of PDEs with boundary control, *SIAM J. Math. Anal.* **45** (2013), no. 3, 1825-1870.
- 28.** F. Bucci, I. Lasiecka, Regularity of boundary traces for a fluid-solid interaction model, *Discrete Contin. Dyn. Syst. Ser. S* **4** (2011), no. 3, 505-521.
- 27.** F. Bucci, D. Toundykov, Finite dimensional attractor for a composite system of wave/plate equations with localised damping, *Nonlinearity* **23** (2010), no. 9, 2271-2306.
- 26.** F. Bucci, I. Lasiecka, Optimal boundary control with critical penalization for a PDE model of fluid-solid interactions, *Calc. Var. Partial Differential Equations* **37** (2010), no. 1-2, 217-235.
- 25.** F. Bucci, Control-theoretic properties of structural acoustic models with thermal effects, II. Trace regularity results, *Appl. Math.* **35** (2008), no. 3, 305-321.
- 24.** F. Bucci, I. Chueshov, Long-time dynamics of a coupled system of nonlinear wave and thermoelastic plate equations, *Discrete Contin. Dyn. Syst. Series A* **22** (2008), no. 3, 557-586.
- 23.** F. Bucci, Control-theoretic properties of structural acoustic models with thermal effects, I. Singular estimates, *J. Evol. Equ.* **7** (2007), no. 3, 387-414.
- 22.** F. Bucci, I. Chueshov, I. Lasiecka, Global attractor for a composite system of nonlinear wave and plate equations, *Commun. Pure Appl. Anal.* **6** (2007), no. 1, 113-140.
- 21.** P. Acquistapace, F. Bucci, I. Lasiecka, Optimal boundary control and Riccati theory for abstract dynamics motivated by hybrid systems of PDEs, *Adv. Differential Equations* **10** (2005), no. 12, 1389-1436.
- 20.** P. Acquistapace, F. Bucci, I. Lasiecka, A trace regularity result for thermoelastic equations with application to optimal boundary control, *J. Math. Anal. Appl.* **310** (2005), no. 1, 262-277.
- 19.** F. Bucci, I. Lasiecka, Singular estimates and Riccati theory for thermoelastic plate models with boundary thermal control, *Dyn. Contin. Discrete Impuls. Syst., Ser. A: Math. Anal.* **11** (2004), no. 4, 545-568.
- 18.** F. Bucci, Uniform decay rates of solutions to a system of coupled PDEs with nonlinear internal dissipation, *Differential Integral Equations* **16** (2003), no. 7, 865-896.
- 17.** F. Bucci, Uniform stability of a coupled system of hyperbolic/parabolic PDEs with internal dissipation, in: "Analysis and Optimization of Differential Systems" (V. Barbu, I. Lasiecka, D. Tiba and C. Varsan Eds.), Kluwer Academic Publishers, Boston/Dordrecht/London, 2003, 57-68.
- 16.** F. Bucci, I. Lasiecka, Exponential decay rates for structural acoustic model with an overdamping on the interface and boundary layer dissipation, *Appl. Anal.* **81** (2002), no. 4, 977-999.
- 15.** F. Bucci, I. Lasiecka, R. Triggiani, Singular estimates and uniform stability of coupled systems of hyperbolic/parabolic PDEs, *Abstr. Appl. Anal.* **7** (2002), no. 4, 169-236.
- 14.** F. Bucci and L. Pandolfi, The regulator problem with indefinite quadratic cost for boundary control systems: the finite horizon case, *Systems Control Lett.* **39** (2000), n. 2, 79-86.
- 13.** F. Bucci, The non-standard LQR problem for boundary control systems, in: "Control Theory and Related Topics" (A. Bacciotti, B. Piccoli and G. Stefani Eds.), *Rend. Sem. Mat. Univ. e Politec. Torino* **56** (1998), no. 4, 105-114.



12. F. Bucci, Stability of holomorphic semigroup systems under nonlinear boundary perturbations, in: "Optimal Control of Partial Differential Equations", (K.-H. Hoffman, G. Leugering and F. Troeltzsch Eds.), *International Series of Numerical Mathematics* **133** (1999), Birkhauser Verlag Basel, 63-76.
11. F. Bucci, Frequency domain stability of nonlinear feedback systems with unbounded input operator, *Dyn. Contin. Discrete Impuls. Syst., Ser. A: Math. Anal.* **7** (2000), no. 3, 351-368.
10. F. Bucci, Absolute stability of feedback systems in Hilbert spaces, in: *Optimal Control: Theory, Algorithms, and Applications* (W.W. Hager e P.M. Pardalos Eds.), Kluwer Academic Publishers, Boston, (1998), 24-39.
9. F. Bucci, L. Pandolfi, The value function of the singular quadratic regulator problem with distributed control action, *SIAM J. Control Optimiz.* **36** (1998), no. 1, 115-136.
8. F. Bucci, L. Pandolfi, Finite horizon regulator problem: the non-standard case, in: *Modelling and Optimization of Distributed Parameter Systems* (K. Malanowski, Z. Nahorski and M. Peszynska Eds.), Chapman and Hall Publ., New York, 131-138.
7. F. Bucci, A remark on regularization of the wave equation with boundary input, in: "Partial Differential Equation Methods in Control and Shape Analysis" (G. Da Prato and J.P. Zolesio Eds.), *Lect. Notes Pure Appl. Math.* **188** (1997), Marcel Dekker Inc., New York, 53-62.
6. F. Bucci, Regularization and approximation of the wave equation with boundary input: an abstract approach, *Dynamic Syst. Appl.* **3** (1994), no. 4, 453-464.
5. F. Bucci, A hyperbolic problem with boundary control: a solution through parabolic regularization, in: "Control of Partial Differential Equations" (G. Da Prato e L. Tubaro Eds.), *Lect. Notes Pure Appl. Math.* **165** (1994), Marcel Dekker, Inc., New York, 23-35.
4. F. Bucci, Singular perturbation for controlled wave equations, *J. Math. Syst. Estim. Control* **6** (1996), n. 2, 135-149 (Summary published in Vol. 4 (1994), no. 3).
3. F. Bucci, A Dirichlet boundary control problem for the strongly damped wave equation, *SIAM J. Control Optim.* **30** (1992), no. 5, 1092-1100.
2. F. Bucci and G. Villari, Phase portrait of the system  $x'=y$ ,  $y'=F(x,y)$ , *Boll. UMI* **4-B** (1990), no. 7, 265-274.
1. F. Bucci, On the existence of periodic solutions for the generalized Lienard equation, *Boll. UMI* **3-B** (1989), no. 7, 155-168.

#### Chapters of books edited

F. Bucci and I. Lasiecka (Communicators), Selected papers, in: *Modern Aspects of the Theory of Partial Differential Equations*, Ruzhansky M., Wirth J. (Eds.), Operator Theory: Advances and Applications, Vol. 216, Birkhäuser, Basel, 2011, VIII, 368 p. ISBN: 978-3-0348-0068-6

F. Bucci and I. Lasiecka (Subeditors), Chapter "Control and Optimisation of Nonlinear Evolutionary Systems", in: *Progress in Analysis and its Applications*, Proceedings of the 7th International ISAAC Congress *Imperial College London, UK, 13-18 July 2009*, Ruzhansky M., Wirth J. (Eds.), World Scientific Publishing Co., 2010. 668pp. ISBN: 978-981-4313-16-2, 978-981-4464-70-3

#### Further publications (subject to endorsement)

F. Bucci, A boundary control problem with infinite horizon for the strongly damped wave equation, Research Report, Dipartimento di Matematica of the Università di Pisa, Quaderni di Analisi Matematica e Probabilità, quaderno no. 2.43.(530), October 1990.

#### Ongoing

P. Acquistapace, F. Bucci, On the infinitesimal generator of an optimal state semigroup

## Teaching Activity

(briefly) Starting in the Academic Year 1994/95, F. Bucci has been responsible of academic courses in *Mathematical Analysis* within various degree programmes such as Mathematics (MS degree), Physics, Civil and Environmental Engineering (both BS and MS degrees), Computer Engineering, etc.). The said courses include: *Analisi Matematica I*, *Analisi Matematica II*, *Complementi di Analisi Matematica* (with an Introduction to *Partial Differential Equations*), *Analisi Superiore* (topics: *Mathematical Control Theory and Semigroup Theory*)