



## Europass Curriculum Vitae

### Personal information

First name / Surname

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**Francesca Bucci**

Dipartimento di Matematica e Informatica (DIMAI)

Università degli Studi di Firenze

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### Work experience

Dates

Occupation or position held

Main activities and

responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and

responsibilities

Name and address of employer

Type of business or sector

Dates

Occupation or position held

Main activities and

responsibilities

Name and address of employer

Type of business or sector

From 23 Dec. 2011

Associate Professor in *Mathematical Analysis*

Teaching and research on topics within the broad area of Mathematical Analysis.

Research specifically focused on: *Analysis and Control of evolutionary Partial Differential Equations*

Università degli Studi di Firenze (Unifi)

Public Higher Education

From Nov. 1994 to Dec. 2011

Researcher (Assistant Professor, permanent position) in *Mathematical Analysis*

Teaching and research on topics within the broad area of Mathematical Analysis

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

Public Higher Education

From Nov. 1990 to Nov. 1994

Researcher (Assistant Professor) in *Mathematical Analysis*

Teaching and research on topics within the broad area of Mathematical Analysis

Università degli Studi di Modena, School of Mathematical Physical and Natural Sciences and Dipartimento di Matematica Pura e Applicata

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: “ <i>Some results on control of Partial Differential Equations</i> ” 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	<i>Laurea</i> (Master of Science degree) In Mathematics
Principal subjects/occupational skills covered	Thesis title: “ <i>Soluzioni periodiche dell’equazione di Liénard generalizzata</i> ” 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 – but not exclusively – for coupled systems of hyperbolic/parabolic PDE, such as thermoelastic systems, models for acoustic- or fluid-structure interactions: well-posedness, interior/boundary regularity of the corresponding solutions; evolution equations with memory.
- 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/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)

Other language(s)

Self-assessment

European level (\*)

Italian

**English**

**French**

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

**Scientific Activities, I.  
Visiting Appointments**

Georgetown University, Department of Mathematics and Statistics (May 23-June 2, 2022), invited by Matthias Eller  
(visit planned to take place during the fall of 2020, *postponed* due to the SARS-CoV-2 emergency, and later to the travel restrictions imposed by the USA)

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 für 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 (more than *sixty*) *invited talks/lectures* in Italian and foreign scientific Institutions, within international (and national) workshops held in various countries including France, Spain, Germany, UK, Austria, Romania, Poland, Morocco, India, USA, Canada, Ecuador, besides Italy.

(The ones pertaining to the last nine years are listed below, along with the most recent *seminar talks/lectures*)

**2023** (most recent one) [XXII Congresso dell'Unione Matematica Italiana, Sezione Speciale 6 "Problemi diretti e inversi in scienza dei materiali, biomedicina e climatologia"](#), Pisa, Sept. 4-9, 2023

**2022** (1 hour) *Seminar talk*: Imperial College London (UK), within the series [CAP Seminars](#), Dec. 13, 2022

School-Workshop on [Analysis, Control & Inverse Problems for Diffusive Systems with Application to Natural and Social Sciences](#), Università degli Studi di Bari Aldo Moro, Dipartimento di Matematica, Bari, July 18-22, 2022

Organizers: Anna Maria Candela (Univ. di Bari), Piermarco Cannarsa (Univ. di Roma Tor Vergata), Genni Fragnelli (Univ. degli Studi della Tuscia), Addolorata Salvatore (Univ. di Bari)

(1 hour) *Seminar talk*: Università degli Studi di Firenze (Unifi), Dipartimento di Matematica e Informatica, within the series [Seminario di Analisi Matematica](#), July 7, 2022  
Organizer: Giuliano Lazzaroni (Unifi)

(1 hour) *Seminar talk*: North Carolina State University (NC, USA), within the series [NCSU Differential Equations/Nonlinear Analysis Seminars](#), Apr. 20, 2022  
host: Lorena Bociu

**2021** Minisymposium ["Fluid solid interactions and mixtures"](#), within the IFIP TC7 Conference on System Modeling and Optimizazion, Quito (EC), Aug. 30-Sept. 3, 2021 (*on-line, on air*)  
Organizers: Lorena Bociu (North Carolina State University), Justin Webster (University of Maryland, Baltimore County)

INdAM Workshop ["Analysis and Numerics of Design, Control and Inverse problems"](#), Istituto Nazionale di Alta Matematica, Roma, June 28-July 2, 2021 (*postponed* from June 13-17, 2020, owing to the SARS-CoV-2 situation)

Organizers: Giuseppe Floridia (Univ. Mediterranea di Reggio Calabria), Enrique Zuazua (Friedrich-Alexander-Univ. Erlangen-Nürnberg; Univ. de Deusto, Bilbao, and Univ. Autónoma de Madrid)

- 2020** (on stand-by) 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).  
Organizers: Fabio Camilli, Mirko D'Ovidio, Anna Chiara Lai, Daniela Sforza (Sapienza Università di Roma)
- Workshop “*Controllabilità di PDE in modelli fisici e scienze della vita*”, Univ. di Roma “Tor Vergata”, Feb. 27-28, 2020.  
Organizers: Piermarco Cannarsa (Univ. Roma Tor Vergata), Genni Fragnelli (Univ. degli Studi di Bari)
- 2019** Special Session “*Problemi diretti e inversi per equazioni di evoluzione*”, within the *XXI Congresso dell'Unione Matematica Italiana*, Pavia, Sept. 2-7, 2019.  
Organizers: Giuseppe Floridia (Univ. di Napoli Federico II), Silvia Romanelli (Univ. degli Studi di Bari)
- Minisymposium “*Nonlinear acoustics: analytical and numerical aspects*”, within the *International Congress on Industrial and Applied Mathematics (ICIAM2019)*, Valencia, July 15-19, 2019.  
Organizers: Barbara Kaltenbacher (Klagenfurt, AT), Marta Pellicer (Girona, ES), Mechthild Thalhammer (Innsbruck, AT)
- 2018** Workshop “*Analysis, Control and Inverse Problems for PDEs*”, within the French-German-Italian Laboratoire International Associé on Applied Analysis (LIA-COPDESC), Napoli, Accademia Pontaniana, Nov. 26-30, 2018.  
Organizers: Giuseppe Floridia (Napoli Federico II), Roberto Guglielmi (Gran Sasso Science Institute, L'Aquila), Cristina Pignotti (L'Aquila)
- Minisymposium “*Honoring the work of Igor Chueshov*”, within the 28th IFIP TC7 Conference on System Modelling and Optimization, Universitaet Duisburg-Essen, DE, July 23-27, 2018.  
Organizers: Irena Lasiecka (Univ. Memphis), Justin Webster (Univ. Maryland, Baltimore County)
- Minisymposium “*Control and inverse problems for evolution equations*”, within SIMAI 2018 (bi-annual congress of the Italian Society of Applied and Industrial Mathematics), Sapienza Università di Roma, July 2-6, 2018.  
Organizer: Giuseppe Floridia (Napoli Federico II)
- Meeting “*New trends in control of evolution systems*”, Gran Sasso Science Institute L'Aquila, Apr. 20-21, 2018.  
Organizers: Roberto Guglielmi (GSSI, L'Aquila), Piermarco Cannarsa (Roma Tor Vergata)
- 2017** Workshop “*Women in Control: New Trends in Infinite Dimensions*”, Banff Internatinal Research Station, Banff, Alberta (CA), July 16-21, 2017.  
Organizers: Luz de Teresa (Universidad Nacional Autonoma de Mexico), Kirsten Morris (University of Waterloo, CA), Irena Lasiecka (University of Memphis, USA)

Workshop "*Partial Differential Equations and Applications*",  
Università di Bologna, May 22-26, 2017.  
Organizers: Angelo Favini (Università di Bologna), Genni Fragnelli (Università di  
Bari), Luca Lorenzi (Università di Parma)

**2016** Minisymposium "*Differential models in applications to nonlinear  
media: memory and biological materials*", within the 7th European  
Congress of Mathematics, Technische Universitaet Berlin, July 18-22,  
2016.

Organizers: Daniele Andreucci and Sandra Carillo (Sapienza Univ. di Roma)

INdAM Meeting "*Optimal Control for Evolutionary PDEs and Related  
Topics*", Palazzone di Cortona, June 20-24, 2016.

Organizers: Pierluigi Colli (Univ. di Pavia), Angelo Favini (Univ. di Bologna),  
Elisabetta Rocca (Univ. di Pavia), Jurgen Sprekels (Humboldt Univ., Berlin)

**2015** Workshop on "*New advances in PDE's, Inverse Problems and Control  
Theory*", Università degli Studi di Parma, July 6-10, 2015.

Organizers: Angelo Favini (Univ. di Bologna), Genni Fragnelli (Univ. di Bari),  
Luca Lorenzi (Univ. di Parma)

Minisymposium "*Wellposedness, control, and observability theories for  
partial differential equations*", within the 27<sup>th</sup> IFIP TC7 Conference 2015  
on System Modeling and Optimization, Université Nice-Sophia  
Antipolis, 29 June–3 July 2015.

Organizers: George Avalos (Univ. Nebraska-Lincoln), Scott Hansen (Iowa State  
Univ.), Daniel Toundykov (Univ. of Nebraska-Lincoln)

GDRE ConEDP-GSSI Workshop on "*Control of Partial Differential  
Equations*", Gran Sasso Science Institute (GSSI), L'Aquila, Apr. 22-24,  
2015.

Organizers: Fatiha Alabau-Boussouira (Univ. de Lorraine), Piermarco Cannarsa  
(Univ. di Roma Tor Vergata), Pierangelo Marcati (Univ. dell'Aquila)

Workshop "*Control Theory and Related Topics*", Politecnico di Milano,  
Dipartimento di Matematica, Apr. 12-13, 2015.

Organizers: by Fulvia Confortola, Monica Conti, Giuseppina Guatteri, Elsa Maria  
Marchini (PoliMI)

Special Session on "*Nonlinear Partial Differential Equations in Sciences  
and Engineering*", within the Northeastern Spring Sectional Meeting of  
the American Mathematical Society, Georgetown University,  
Washington DC, Mar. 7-8, 2015.

Organizers: Lorena Bociu (North Carolina State Univ.), Ciprian Gal (Florida  
International Univ.), Daniel Toundykov (Univ. of Nebraska)

**Professional activities.  
Service to Unifi**

**Academic libraries**

**2018-2021** Member of the *Comitato Scientifico della Biblioteca di Scienze*  
(representative for the Dipartimento di Matematica e Informatica);  
duration: three years (12 Nov. 2018-31 Oct. 2021)

**Comitato Unico di Garanzia per le Pari Opportunità, la non  
discriminazione ed il benessere di chi lavora (CUG) – Equal  
Opportunities, etc.**

	<p><b>2021-2023</b> Member of the CUG of the Università degli Studi di Firenze (Unifi) duration: four years starting June 2021 (resigned on July 21, 2023)</p> <p>Organizer of the following meetings/workshops/seminars (within the activities of the CUG Unifi):</p> <ul style="list-style-type: none"> <li>• Dialogo <a href="#">“Lo spazio delle donne”</a>, Università degli Studi di Firenze, Mar. 10, 2023;</li> <li>• Incontro-conversazione <a href="#">“La disabilità visiva nella ricerca: aggirare creativamente gli ostacoli. Esperienze nella storia del diritto, nella matematica e nella pratica artistica”</a>, Università degli Studi di Firenze, Oct. 26, 2022;</li> <li>• Tavola rotonda <a href="#">“Afghanistan, ieri e oggi. Testimonianze, analisi, azioni e progetti”</a>, Università degli Studi di Firenze, Oct. 15, 2021.</li> </ul> <p>Co-author of the <i>Bilancio di genere 2020</i> of Unifi</p>
	<p><b>2019</b> Proofreader/reviewer for the <i>Bilancio di genere 2018</i> of Unifi</p> <p>Invited participant at: <a href="#">La vita emotiva dell'accademia</a>. Presentation/reading of <i>“Feeling Academic in the Neoliberal University”</i>, edited by Yvette Taylor and Kinneret Lahad, Palgrave-Macmillan, Basingstoke 2018; Università degli Studi di Firenze, Mar. 20, 2019</p>
	<p><b>2012-2019</b> Member of the <i>Comitato per la Didattica</i>, Corso di Studio in Ingegneria Civile Edile Ambientale (from Dec. 2012 to Nov. 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)</p>
<p><b>Professional activities.</b> <b>Orientation programmes,</b> <b>other talks</b></p>	
	<p><b>2019-2023</b> Institutional salutes at <a href="#">May12@DiMaI</a>, DIMAI Unifi, May 15, 2023</p> <p>Invited speaker at <a href="#">May12@DiMaI</a>, DIMAI Unifi, May 13, 2022</p> <p>Invited speaker at: <a href="#">“Pillole di parità. La femminilizzazione delle professioni tra cambiamenti sociali e stereotipi. Matematica, Informatica, Architettura e Ingegneria: sostantivi femminili”</a>, Università degli Studi di Firenze, Mar. 15, 2021</p> <p>Invited speaker at: <a href="#">Generi e accademia a partire da noi</a>, Università degli Studi di Firenze, Feb. 28, 2019</p>
<p><b>Scientific activities, III.</b> <b>Organization of meetings</b></p>	

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 Politecnico di Torino and the Università di Pisa (Italy), besides the Università degli Studi di Firenze; see below.

- 2021** Minisymposium “*Analysis, Control and Inverse problems for Partial Differential Equations*”, within the 8th European Congress of Mathematics (8ECM), Portorož, Slovenia, June 20-26, 2021 (online; postponed from July 5-11, 2020).  
Organized with Barbara Kaltenbacher (Alpen-Adria Univ. Klagenfurt, AT)
- Fourth one-day workshop within the series<sup>1</sup> “[\*Incontri di Analisi Matematica tra Firenze Pisa e Siena\*](#)”, held online on June 4, 2021.  
Promoted and organized with: Andrea Colesanti (Firenze), Giovanni Bellettini (Siena), Elisabetta Chiodaroli, Emanuele Paolini and Nicola Visciglia (Pisa)
- 2020** Third one-day workshop within the series “*Incontri di Analisi Matematica tra Firenze Pisa e Siena*”, held online on Oct. 30, 2020
- 2019** Second one-day workshop within the series “*Incontri di Analisi Matematica tra Firenze Pisa e Siena*”, Dipartimento di Matematica of the Università di Pisa, Nov. 22, 2019.
- First one-day workshop within the series “*Incontri di Analisi Matematica tra Firenze Pisa e Siena*”, Dipartimento di Matematica e Informatica of the Università degli Studi di Firenze, May 17, 2019.
- 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, IEIIT)
- 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)

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<sup>1</sup> A series of workshops hosting a variety of research topics in the broad subject “Mathematical Analysis”, aimed at connecting researchers and students within and between Firenze, Pisa and Siena.



- 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 Autonoma 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 Pais 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 Universitaet 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 Universitaet 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** 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 work**

**Scientific Activities, V.  
Publications**

Reviewer for the following international journals:

*Journal of Mathematical Analysis and Applications, Evolution Equations and Control Theory, Journal of Differential Equations, Discrete and Continuous Dynamical Systems (and DCDS-S, DCDS-B), Mathematical Models and Methods in Applied Sciences (M3AS), Applied Mathematics and Optimization, Communications in Contemporary Mathematics, Journal of the European Mathematical Society, SIAM Journal on Applied Mathematics, SIAM Journal on Control and Optimization, Journal of Mathematical Fluid Mechanics, Nonlinear Analysis, Applicable Analysis, Nonlinear Differential Equations and Applications (NoDEA), Communications on Pure and Applied Analysis, Zeitschrift fuer Angewandte Mathematik und Physics, Control & Cybernetics, The Quarterly Journal of Mechanics & Applied Mathematics, IEEE Transactions on Automatic Control*

**In preparation:**

- F. Bucci and M. Eller, An optimal control problem for Maxwell's equations

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

**38.** P. Acquistapace, F. Bucci, Riccati-based solution to the optimal control of linear evolution equations with finite memory, *Evolution Equations and Control Theory* (2023), DOI:

<https://www.aims sciences.org/article/doi/10.3934/eect.2023035>

**37.** P. Acquistapace, F. Bucci, Uniqueness for Riccati equations with unbounded operator coefficients with application to the optimal boundary control of composite systems of evolutionary partial differential equations, *Ann. Mat. Pura Appl.* (2023); DOI:

<https://doi.org/10.1007/s10231-022-01295-7>

**36.** P. Acquistapace, F. Bucci, On the infinitesimal generator of an optimal state semigroup, *Semigroup Forum* **105** (2022), 46-72; DOI:

<https://doi.org/10.1007/s00233-022-10288-0>

**35.** F. Bucci, M. Eller, The Cauchy-Dirichlet problem for the Moore-Gibson-Thompson equation, *C. R. Math. Acad. Sci. Paris* **359** (2021), no. 7, 881-903; DOI: [10.5802/crmath.231](https://doi.org/10.5802/crmath.231)

**34.** F. Bucci, Improved boundary regularity for a Stokes-Lamé system, *Evol. Equ. Control Theory* **11** (2022), no. 1, 325-346 (*Online First* Apr. 9, 2021); DOI: [10.3934/eect.2021018](https://doi.org/10.3934/eect.2021018)

**33.** 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>

**32.** 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)

**31.** 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; DOI: [10.1016/j.jde.2015.01.037](https://doi.org/10.1016/j.jde.2015.01.037)

- 30.** 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. DOI: [10.1007/978-3-319-11406-4\\_3](https://doi.org/10.1007/978-3-319-11406-4_3)
- 29.** 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; DOI: [10.1137/120867433](https://doi.org/10.1137/120867433)
- 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.
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#### **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.

**Teaching Activity**

(*briefly*) Starting in the academic year 1994-1995, F. Bucci has been responsible of academic courses in *Mathematical Analysis* within various degree programmes such as [Mathematics \(MS degree\)](#), Physics (BS degree), 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* (more specifically, with focus on *Mathematical Control Theory and Semigroup Theory*),
- *Calcolo delle Variazioni e Equazioni alle Derivate Parziali*.

Collaborative teaching has been carried out – within the MS programme in Mathematics – jointly with the colleagues Andrea Colesanti, Luigi De Pascale, Sergio Vessella, and Giuliano Lazzaroni (forthcoming).

The course

- *Control theory for systems governed by Partial Differential Equations: an introduction* (instructors: F. Bucci, Sergio Vessella; Hours/ECTS: 24 / 4)

is foreseen to be offered in the fall semester – within the 2023-2024 [PhD Programme](#) (Dottorato di Ricerca in Matematica, Informatica, Statistica) at the DIMAI Unifi.

General information on the courses held in the *current academic year* (AA 2023-2024) is found [here](#) (Unifi) and [here](#) (personal website); further relevant information and teaching materials are posted in Moodle.