

Curriculum Vitae of Giuseppe Buttazzo

Name: Buttazzo

First name: Giuseppe

Current position: Full Professor of Mathematical Analysis at the "Dipartimento di Matematica" of University of Pisa (Italy)

Languages: Italian (native language), French (spoken and written), English (spoken and written)

Working address: Dipartimento di Matematica - Largo B. Pontecorvo, 5 - 56127 PISA (Italy)

Academic Titles and Career

October 1972: Beginning of the first year in Mathematics at the University of Pisa.

October 1973: Winning a competition for a student position in Mathematics at the Scuola Normale Superiore di Pisa.

July 1976: Taking the degree certificate (Laurea) in Mathematics at the University of Pisa with full marks (110/110 cum laude), and the Diploma in Mathematics at the Scuola Normale Superiore di Pisa. Title of the thesis: *Su un tipo di convergenza variazionale*, adviser: Prof. E. De Giorgi.

December 1976: Winning a competition for a Ph. D. position (Perfezionando) in Mathematics at the Scuola Normale Superiore di Pisa; research adviser: Prof. E. De Giorgi.

Academic Year 1978–1979: One year of study and research in Paris at the Ecole Normale Supérieure de St. Cloud.

September 1981: Winning a competition for a permanent position (Ricercatore Confermato) in Mathematics at the Scuola Normale Superiore di Pisa.

December 1986: Winning a national competition for a Full Professor position in Mathematical Analysis.

May 16, 1987–October 31, 1990: Full professor of Mathematical Analysis at University of Ferrara.

January 3–October 31, 1990: President of the "Consiglio di Corso di Laurea in Matematica" of University of Ferrara.

From November 1, 1990: Full professor of Mathematical Analysis at University of Pisa.

Experiences in evaluation panels

member in several Evaluation Committees of research centers and funding agencies:

AERES-HCERES (France) 2009, 2011, 2015, 2018

CMAF (Portugal) 2010

ANVUR (Italy) 2012

DFG (Germany) 2012, 2017

ERC (EU) 2014, 2016

IUF (France) 2014, 2015, 2016

MOSTA (Lithuania) 2018

Awards and Honours

- Santaló lecturer for 2010 at Universidad Complutense de Madrid;
- Winner of "*Premio Luigi e Wanda Amerio 2011*", awarded by the "Istituto Lombardo Accademia di Scienze e Lettere";
- Winner of "*Premio Città di Castri 2012*", awarded by the town of Castri di Lecce.

Participation to Editorial Boards

Editor of several international journals as:

- Journal of Convex Analysis (managing editor),
- ESAIM: Control, Optimisation and Calculus of Variations (COCV),
- Journal of Optimization Theory and Applications,
- Set-Valued and Variational Analysis: Theory and Applications,
- Revista Matemática Complutense,
- Applied Mathematics and Optimization,
- ISRN Mathematical Analysis,
- Pure and Applied Functional Analysis,
- International Journal of Pure and Applied Mathematics (IJPAM),
- International Journal of Differential Equations and Applications (IJDEA),
- International Journal of Dynamical Systems and Differential Equations (IJDSDE),
- Communications in Applied Analysis.

Scientific Research

My scientific research has been mainly devoted to the following fields, in which I published 220 papers and 23 books (see list of publications).

- Semicontinuity and Γ -convergence for functionals of the calculus of variations;
- Optimal control problems: relaxed controls and limit problems;
- Singular perturbation problems;
- Existence theory for unilateral problems in linear and nonlinear elasticity;
- Macroscopic behaviour of elastic periodic networks: homogenization;
- Variational problems with a lack of coercivity;
- Functionals defined on the space of measures;
- The Lavrentiev Phenomenon in the calculus of variations;
- Shape optimization problems;
- Optimization problems in mass transportation theory;
- Mathematical models in Density Functional Theory.

On the subjects above I have given lectures at many Universities in Italy and abroad, and I have organized a large number of scientific meetings (at national and international level).

I have been, since a long time, the scientific responsible of a research group in Pisa that has always been funded by the Italian Ministry of University and Research (MIUR).

Didactic and Training Activity

I have given many courses on several subjects in Mathematical Analysis, at Bachelor level, Master level and Ph.D. level. I supervised 20 Master theses and 23 Ph.D. theses.

Five important publications

- [1] G. Buttazzo, M. Giaquinta, S. Hildebrandt: *One-dimensional Calculus of Variations: an Introduction*. Oxford University Press, Oxford (1998). Russian translation: Tamara Rozhkovskaya, Novosibirsk (2002).
- [2] G. Bouchitté, G. Buttazzo: *Characterization of optimal shapes and masses through Monge-Kantorovich equation*. J. Eur. Math. Soc., **3** (2001), 139–168.
- [3] D. Bucur, G. Buttazzo: *Variational Methods in Shape Optimization Problems*. Progress in Nonlinear Differential Equations **65**, Birkhäuser Verlag, Basel (2005).
- [4] H. Attouch, G. Buttazzo, G. Michaille: *Variational Analysis in Sobolev and BV Spaces: Applications to PDEs and Optimization*. MOS-SIAM Book Series on Optimization **17**, SIAM, Philadelphia (2014).
- [5] G. Bouchitté, G. Buttazzo, T. Champion, L. De Pascale: *Relaxed multi-marginal costs and quantization effects*. Ann. Inst. H. Poincaré Anal. Non Linéaire, **38** (2021), 61–90.