

Andrea Bacciotti

Giuseppe Anichini and Luciano Pandolfi

Andrea Bacciotti passed away in his home in Turin on August 2, 2022, at the age of 74.

Andrea Baccotti was full professor of Mathematical Analysis at the Politecnico di Torino, and he was still fully active in research and scientific dissemination. His last book [5] was published few months before his death, in March 2022.

Andrea Bacciotti was born in Florence on September 12, 1948, and graduated there with the thesis *Nonlinear Control Processes*. The supervisor of the thesis was Prof. Roberto Conti.

MathSciNet lists 86 publications of Andrea Bacciotti: the five books [1, 2, 3, 4, 5] and 81 publications most of them in internationally renowned journals or in proceedings of conferences.

The “Tesi di Laurea” of Andrea Bacciotti was concerned with distributed nonlinear control systems but he was soon¹ attracted by the study of nonlinear finite dimensional systems. In a first period of his activity he was interested in the applications of geometrical and topological methods to controllability of nonlinear systems and optimality conditions but he became soon interested to study problems of stability and stabilizability, the field to which he gave the most interesting contributions. His books [1, 2, 3, 4] as well as the largest part of his papers are devoted to the stability and stabilization problems.

In the last years of his life and research activity, Andrea Bacciotti had a new interest: the study of switched systems and consequently also the study of the dynamics of discrete systems. His last book [5] is devoted to this topic.

The books of Andrea Bacciotti (two of them in collaboration with Lionel Rosier) have a rigorous theoretical and mathematical approach and present in a modern and original way also classic topics, such as Liapunov’s second method, in the delicate context of control systems. These books become reference texts for engineers developing automatic control systems.

Andrea Bacciotti has greatly stimulated mathematical research. He was local coordinator and responsible of several national research projects and in this context invited numerous and important foreign visitors.

¹at the time in Italy there was not a PhD program and the research activity began during the elaboration of the “Tesi di Laurea” or soon after that.

Toglierei questa lista che niente dice a chi non conosce il passato della ricerca in Italia Stability and Control of Distributed Systems with Discontinuous Dynamics, on Non-regular dynamic systems, on Non-continuous control laws, on Regulation of linear and non-linear systems linear.

Andrea Bacciotti actively served the scientific community in Florence, Siena (where he was *professore incaricato* for few years) and at the Polytechnic of Turin where he took up service in 1981 as professor of Mathematical Analysis, remaining there until his retirement. At the Polytechnic of Turin he held various roles. In particular, he was vice chairman for teaching in the difficult moment of the implementation of first and second level degrees of “laurea” and held the role of director of the *Dipartimento di Matematica*. He was a member and then chairman of the UMI Commission for the Research and Teaching of Mathematics in the Faculties of Engineering.

Andrea Bacciotti edited the section dedicated to doctoral theses of the UMI journal *Matematica, Cultura e Società*. He was director of the journal *Rendiconti del Seminario Matematico dell'Università e del Politecnico di Torino* and an associate editor of other journals including the *SIAM Journal of Control and Optimization*.

Andrea Bacciotti had an intense teaching activity. In addition to a basic course in Mathematical Analysis, every year he held courses of various levels: Numerical Calculus modules, in the first level courses, in which he tried to teach students the critical and well-founded theoretical use of numerical techniques; courses on mathematical control theory for master students and he gave integrated courses on dynamical systems with fellow engineers. His teaching activity continued even after retirement.

This teaching activity produced several textbook of noticeable level.

Andrea Bacciotti was also involved in training teachers of mathematics and in the dissemination of scientific knowledge. He had a role in several educational conferences.

The writers remind the kindness of Andrea with colleagues, his sincere friendship, his reliability, the brilliance with which he addressed young people when speaking about the beauty and necessity of mathematics in this third Millennium. The latest example was few months before his death, in June 2022, when Andrea brilliantly interacted for about two hours with a large group of high school students on the topic *Once upon a Time there was a Slide Rule*.

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Giuseppe Anichini
Dipartimento di Matematica e Informatica,
University of Florence,
Italy
E-mail: giuseppe.anichini@unifi.it

Luciano Pandolfi
Politecnico di Torino,
Dipartimento di Scienze Matematiche "G. L. Lagrange",
Corso Duca degli Abruzzi 24,
10129 Torino, Italy
E-mail: luciano.pandolfi@polito.it