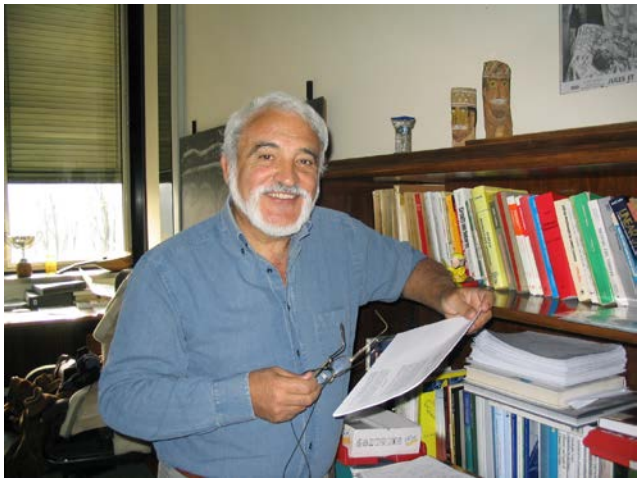
Sergio Rinaldi

Politecnico di Milano
Dipartimento di Elettronica, Informazione e Bioingegneria
Piazza Leonardo da Vinci 32
20133 Milano

Tel: (+39) 02 2399 3563
e-mail: sergio.rinaldi@polimi,it



Short biography

Sergio Rinaldi is Professor Emeritus of System Theory at the Department of Electronics, Information and Bioengineering (DEIB) of the Politecnico di Milano, Italy and is Research Scholar at the International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.

In the first ten years of his research activity, Sergio Rinaldi has concentrated on linear systems. In 1969 he has given the first course in Italy on linear system theory. The lecture notes of that course have been later collected into the first Italian book on the subject: Teoria dei Sistemi, Hoepli-CLUP, 1974.

Then in the period 1975-1990 Sergio Rinaldi has switched to more applied research by focusing on urban air pollution, flood prediction and control, river pollution, and renewable resources management. His most significant publication of this period is the 1978 McGraw Hill book Modeling and Control of River Quality, written at IIASA.

In the period 1990-2008 Sergio Rinaldi has renewed his interest for the theoretical aspects of dynamical systems by focusing, in particular, on nonlinear dynamics and cooperative systems. These studies have brought to a number of original results collected in the 2000 John Wiley book Positive Linear Systems: Theory and Applications. In the context of non-linear systems he has been particularly active on bifurcation analysis, slow-fast systems and discontinuous systems. These three themes are basic for the understanding of evolutionary dynamics, which result from the interactions between slow innovation processes and fast competition processes, as described in the book Analysis of Evolutionary Processes: The Adaptive Dynamics Approach and Its Applications, Princeton University Press, 2008.

In the last years, Sergio Rinaldi has focused on various applications of mathematical modeling in social sciences, with particular attention to the dynamics of interpersonal relationships. The most relevant results in this context are collected in the recently published book Modeling Love Dynamics, World Scientific Series on Nonlinear Science, 2015.

Sergio Rinaldi is the author of more than 200 peer reviewed papers and of 8 books and has been Associate Editor of International Journal of Bifurcation and Chaos, Ecological Modelling, and Applied Mathematics and Computation. He has been Visiting Professor at Stanford, Berkeley, Vancouver, Kyoto, Wien and Linz and has been Director of the Research Center for Environmental Modelling (CIRITA), Politecnico di Milano, and Professor of Systems Modelling at Alta Scuola Politecnica.

Sergio Rinaldi was awarded the Italgas Prize for Scientific Research and Innovation in 1988 and the Calabria Prize for Literature and Science in 1996.

Bibliometric indexes (updated 2016-09-14 – Google Scholar)

- Total number of citations: 6362
- *h*-index: 38
- *i10*-index: 91
- Most cited work: 1257 (Positive linear systems: theory and applications, John Wiley & Sons, 2000)

List of published books

- Rinaldi, S. (1974). *Teoria dei sistemi*. Cooperativa Libraria Universitaria del Politecnico.
- Rinaldi, S., Soncini-Sessa, R., Stehfest, H., & Tamura, H. (1979). *Modeling and control of river quality* (Vol. 283). McGraw-Hill.
- Fronza, G., Locatelli, A., Rinaldi, S. (1982). *Elementi di algebra lineare.* Cooperativa Libraria Universitaria del Politecnico.
- Rinaldi, S., & Farina, L. (1995). *I sistemi lineari positivi: teoria e applicazioni*. CittàStudi Edizioni.
- Rinaldi, S., & Piccardi, C. (1997). *I sistemi lineari: teoria, modelli, applicazioni*. CittàStudi Edizioni.
- Farina, L., & Rinaldi, S. (2000). *Positive linear systems: theory and applications*. John Wiley&Sons.
- Dercole, F., & Rinaldi, S. (2008). *Analysis of evolutionary processes.* Princeton University Press.
- Rinaldi, S., Della Rossa, F., Dercole, F., Gragnani, A., & Landi, P. (2015). *Modeling Love Dynamics*. World Scientific.