

Prof. Laura Gardini <laura.gardini@uniurb.it>

Full Professor of Mathematics for Economics 1994-2022 now Emeritus Professor at the Department DESP, University of Urbino, Italy

Research Interests

Dynamical Systems (stability, bifurcations and analysis of complex behaviors) and their applications to the modeling of the evolution in Economic, Financial, Social, Biological and Physical systems. Results have been obtained in the analysis of noninvertible maps of the plane, following the pioneering works of I. Gumowski and C. Mira. These tools have been improved and applied in the study of the dynamics in smooth models, piecewise-smooth and discontinuous ones. In particular, the recent research fields include:

Global properties and bifurcations of attracting sets and basins of attraction in discrete time dynamical systems: homoclinic bifurcations and contact bifurcations that change the topological structure of attractors or basins of attraction.

Global bifurcations in iterated two-dimensional maps not defined in the whole plane due to the presence of a vanishing denominators, and related properties of focal points, prefocal curves, lobes, crescents, unbounded sets of attraction.

Qualitative analysis of discrete dynamical systems represented by the iteration of noninvertible maps, and study of their properties and global bifurcations by the use of critical sets.

Symmetric dynamical systems and related problems of chaos synchronization, on-off intermittency, riddling and blowout bifurcations related to the presence of Milnor attractors.

Border collision bifurcations in piecewise smooth maps, continuous and discontinuous.

New kinds of attractors, weird quasiperiodic attractors, in discontinuous piecewise linear maps.

Dynamic modeling in Economic, Finance and Social Sciences: dynamic oligopoly games, models of economies with boundedly rational agents (and related problems of expectations and learning schemes) models of economies with heterogeneous agents, nonlinear models of business cycle.

<https://www.mdef.it/who-is-who/laura-gardini/publications/journals>

https://scholar.google.com/citations?hl=it&user=wjOZ4EoAAAAJ&view_op=list_works&sortby=pubdate

<https://www.researchgate.net/profile/Laura-Gardini>

Co-Editor in Chief of the International Journal Mathematics and Computers in Simulation

<https://www.sciencedirect.com/journal/mathematics-and-computers-in-simulation>

Associated Editor of Communications in Nonlinear Science and Numerical Simulations. from March 2019

Associate Editor of Journal of Difference Equations and Applications. from 2015