

Titles:

Graduation in Physics cum laude at the University of Milan (May 1986)

Researcher (academic discipline n.85, later scientific discipline sector D04C, later scientific discipline sector FIS-06)

Associate Professor (scientific discipline sector FIS-06), in the Faculty of Mathematical, Physical and Natural Sciences of the University of Milan, since October 2006.

Professional Curriculum:Didactic Experiences:

From September 1987 to October 1991 I worked as a teacher of Mathematics in secondary school. I also achieved the teacher training. From October 1991, since my appointment as a researcher, I have always carried out didactic activity both in the fields of General Physics (Physics I, Physics II, General Physics, Physics Laboratory) and Physics of the Atmosphere (Environmental Physics, Physics of the Atmosphere, Climatology and Meteorology, Laboratory of Environmental Physics, Laboratory of Physical Measurements of the Environment).

Research

I started my research activities in the fields of atmospheric pollution and boundary layer meteorology, both in measurements on the field and modelling. After that, my main interests progressively shifted towards the reconstruction of the evolution of Italian, Alpine and Mediterranean climate over the last 200/250 years. The data I analyzed encompass some of the longest Italian secular series (including the ones of the Observatories of Milano-Brerà, Bologna and Mantova), the series included in the secular databases of the Hydrographic Service, the Air Force, and a large dataset of a wide European area centred over the Alpine area (UE Projects ALPCLIM and ALP-IMP). My researches focussed on:

- meteorological parameters evolution in terms of long-term trends and variability;
- detection of teleconnections between meteorological evolution in the Italian region and middle-to-large scale circulation indices;
- issues related to a possible evolution of drought/flood risks connected to variations in the spatial/temporal distribution of precipitation over the Mediterranean;
- detection of a possible solar signal in the temperature evolution in the last 200/250 years;
- definition of adaptation strategies for agriculture and electric system in the context of a changing climate;
- statistical techniques aiming at downscaling AOGCM projections (up to 100 years in the future) to local scale, in order to provide reasonable and critically-evaluated inputs for impact studies.

Ongoing research:

- procedures aiming at downscaling, at local scale (that is at a much higher resolution than the one typical of sparse meteorological network), information about climate variability and change.

Scientific Co-operations:

- ISAC-CNR (Institute of Atmospheric Sciences and Climate, of the National Research Council): a 10-year-long co-operation has enabled the creation of a leading national and a well established international research group in the field of climatology.

At national level, this group has filled the gap left by the lack of a national meteorological service, especially in terms of recovery, critical analysis and homogenization of a wide database of meteorological series from Italy and surrounding areas.

- Brera Astronomical Observatory (OAB) and Central Office of Agricultural Ecology (UCEA): systematic co-operation for the recovery of new meteorological series

- Austrian Central Office for Meteorology and Geodynamics (ZAMG): scientific co-operation originating from UE Projects (ALPIMP and ALP-CLIM) and later extended to more projects (see detailed Project section)

- Royal Dutch Meteorological Institute (KNMI): Project ECA

- Climatic Research Unit of the University of East Anglia (CRU-UEA):

UE-INTERREG Projects IMPROVE and ALP-IMP. CRU-UEA represents the most influential research group in the world in the field of past climate reconstructions by means of instrumental historical series.

- National Consortium of Universities for Atmospheric and Hydrospheric Physics (CINFAL): national consortium which the University of Milan has recently joined. I hold the position of current delegate of UniMI at CINFAL.

- More project-based co-operations with several universities and scientific institutions

Projects:

- CLIMAGRI, "Climate Change and Agriculture": Finalized Project of the Ministry of Agriculture and Forest Management. I held the position of co-ordinator in the FAO subproject "CLIMAGRImed - The Mediterranean component of the CLIMAGRI Project on climate change and agriculture", with the aim of disseminating of CLIMAGRI results to the developing countries of the area;

- "Evolution in the frequency of precipitation and drought extreme events in Italy over the last 120 years and their impacts on bioecosystems": Project of the Ministry of University and Research - FIRB;

- Kyoto Project, "Research on climate change and greenhouse gases control in Lombardy": a project funded by APAT (nowadays ISPRA), Ministry of the Environment, Lombardy Region and Fondazione Lombardy for the Environment (FLA). I held the position of co-ordinator of a research line;

- PRIN 2006, "Deterministic and statistic study of direct and/or derived properties of cyclonic vortices over Italy, in particular at secular time scale"

- CARIPANDA, "Climate Change and Water Resources and the Adamello Natural Park", funded by Fondazione CARIPLO.

- COST Action ES0601 - Advances in homogenisation methods of climate series: an integrated approach (2007-2012)

A number of other projects have been carried out over the last 5 years. Among them,

- CESI Project "Study of the climate variables which influence the electric system: statistical methodologies for the evaluation of past variability and middle-to-long term predictability", of the Italian Experimental Electrotechnical Center (CESI)
- FLA Project "Study for the development of tools for the knowledge and the evaluation of hazards in Lombardy"
- Municipality of Saronno: a 20-year-long consultancy on the issues of atmospheric pollution and noise-related pollution.
- Co-operation with ISAC-CNR: projects: i) ALP-IMP: UE "Multi-centennial climate variability in the Alps based on instrumental data, model simulation and proxy data", ii) Italy-USA co-operation on science and technology of climate change, iii) UE-INTERREG FORALPS;
- Co-operation with ZAMG: ECSN-HRT Project