

## Curriculum Vitae et Studiorum

**Marina Baldi**

### PERSONAL INFORMATION

**First Name/Surname** Marina Baldi  
**Date of Birth:** September 25<sup>th</sup>, 1958  
**Gender:** Female  
**Nationality:** Italian  
**Country of Residence:** Italy

**Current position** Scientist in Climatology and Meteorology at the Institute of  
Biometeorology of the National Research Council  
Responsible for the IBIMET branch in Rome

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## **EDUCATION AND TRAINING**

- 1977 Classical studies in the high school  
1983 - 1984 Specialization School in Geophysics, Univ La Sapienza, Roma (Italy)  
1985 Doctor in Physics, Univ La Sapienza, Roma (Italy)  
1989 Attended a School in “Atmospheric Air Pollution Modelling” at the International Centre for Theoretical Physics, Trieste (Italy).  
1990 – 1991 Attended a Course on “Nonlinear dynamical systems”, Dpt of Engineering, Colorado State University, Fort Collins (USA).  
1996 Attended a Course on “Security of computer systems”, University of British Columbia, Vancouver (Canada).

**Mother language:** Italian

**Other languages:**

	<i>Listening</i>	<i>Reading</i>	<i>Speaking</i>	<i>Writing</i>
<b>English</b>	Very good	Excellent	Very good	Very good
<b>French</b>	Reasonably Good	Good	Poor	Poor

**Personal Interests and Hobbies:** Classic Music, Theatre, Gardening, Cooking, Hiking

## **BACKGROUND PREPARATION, TECHNICAL SKILLS AND COMPETENCES**

I have about twenty years of research experience in Universities and Research Institutes in Italy and overseas, and a strong background in Physics, Mathematics and Environmental Sciences, and several published papers, and communications at International Workshops and Conferences.

I have deep experience in modelling and in statistical analysis of environment data, specifically for Atmospheric Dynamics and Climate.

I work on climate dynamics and variability finalized to applications, such as impacts on the agroforestry system, on water resources, and more specifically in the following sectors:

- Regional Climatology, including analysis of trends, variability, and extreme events
- Modelling of climate change, teleconnections, active precursors of long term/seasonal forecast
- Impact of climate change and variability on water resources and agroforestry
- Dynamics of the Atmosphere
- Statistical modelling for climate seasonal predictions
- Landuse – Atmosphere interactions
- Air Pollution, Transport and Diffusion of Pollutants in the Troposphere
- Atmospheric Boundary Layer Processes
- Coastal waters dynamics, air – sea interactions

I easily manage mathematical and statistical methods applied to geophysical and environmental phenomena, specific software packages, spreadsheet and relational data base management systems. I have some experience in operating systems maintenance, upgrading, and security issues. I have good ability to use programming languages, graphical packages, and mapping software.

I have good experience in coordination and management of research activities, in obtaining external funding and in developing externally funded research program. Having participated to several national and international projects, I have good ability to work under pressure of deadlines and to interact with other partners of different Institutions.

I have a knowledge of national and international research structures and institutions, having collaborated with several Institutes in different Research Projects in UK, Austria, Canada, US, Japan and Italy.

I also have good skills as lecturer in climatology and atmospheric dynamics. Good ability in communication of scientific subjects and research results to general public and media (newspaper, TVs). I am easily adapting to new working environment, and open to new research subjects, and easily settling to new working duties.

In the recent past (2007-2008 I was on leave from the *Institute of Biometeorology of the National Research Council of Italy (IBIMET - CNR)*, working as Senior Scientist in Climate and Meteorology at NIWA (National Institute of Water & Atmospheric Research Ltd.) on climate, climate change and climate variability impact.

## **COORDINATION ACTIVITIES**

- 1989-2003 Responsible of the Group for Mesoscale Circulation and Air Pollution Models at the Research Area of Frascati, ARF-CNR (Italy) and then at IFA (Institute for Atmospheric Physics) in Rome
- 1991-present Italian representative at COST Activities and at the WMO – Session on Climatology
- 2003-present Coordinator of Research activities on Climate change and variability at the Institute of Biometeorology
- 2006-present Responsible of the branch of the Institute of Biometeorology located in Rome and of the research group “Seasonal forecast” in the same Institute.

### ***Scientific coordinator of research activities for the following Italian Projects:***

- CNR Project "Roma Capitale" on the Climatology of Rome  
Colaboration between the Italian National Research Council (CNR) and the National Electric Board (ENEL) on the atmospheric circulation, transport and diffusion of pollutants.
- CNR Project "Ambiente Territorio nel Mezzogiorno" on the climatology of South Italy.
- CNR Project "Aree Metropolitane" on the diffusion and transport in urban environment.
- Research Project on Antarctic Atmosphere on the katabatic winds and drainage flows.
- National Project “Gran Sasso” on the atmospheric dynamics in central Italy.
- Several Italian Space Agency (ASI) Projects. The last MeditRAin focused on extreme events in the Mediterranean Region.
- Project “Castelporziano” financed by the Italian Academy of Science on coastal environment and climatology in the Castelporziano Park of the Italian President.
- Project of the Arno river basin Authority on the climatology and water cycle of the Arno river basin.
- Project “Climagri”, financed by the Italian Ministry of Agriculture on the “Analysis of the climate variability of the Mediterranean basin using observations, reanalysis, modelling results”.
- Project “CLIMANIMAL” financed by the Italian Ministry of Agriculture on the climatology and forecast of heat waves events in Italy (proposal approved).
- Project “TEMPIO” financed by the Italian Ministry of Agriculture on the development of a seasonal forecast (1 to 3 months) operational system to be used to better plan agriculture practices (proposal approved).

### ***Scientific coordinator of research activities for the following International Projects:***

- Italian co-PI in the Climate Change and Impact Research: the Mediterranean Environment (CIRCE) financed by European Union in the VI FP, to study the Mediterranean climate variability (proposal approved).
- Italian co-PI in the project on Weather types causing healthy risks due to heat stress and air pollution in the Mediterranean in collaboration with Tel Aviv University and The Open University of Israel (proposal approved).

Project African Monsoon Multidisciplinary Analysis (AMMA) financed by European Union in the VI FP. Coordinator for the Italian research activities on the West African Monsoon climatology and variability and its predictability.

European Airborne Polar Experiment (APE). Coordinator of the CNR activities on modelling of gravity and lee waves in the atmosphere.

European Project Mesoscale Alpine Programme (MAP). Responsible of the research activities at IFA-CNR on climate of the Mediterranean Region and connection to precipitation regimes on the Alps.

Italian PI for the project ACE-ASIA, in collaboration with RIAM (Fukuoka, Japan) to study the transport of dust from the East Asia towards the Pacific Ocean.

Project on Tropospheric Ozone in Europe in the framework of the UN/ECE Convention on Long-range Transboundary Air Pollution. *Coordinator* of data collection activities and *Responsible* for the

PI in the project on climatology of China desert areas in collaboration with the Chinese Academy of Forestry

PI for IBIMET-CNR research activities in the framework of the MedCLIVAR initiative on Mediterranean Climate and its variability.

She has worked in several National Science Foundation (NSF) Projects (USA) in collaboration with the Colorado State University on the following topics:

- Flow and fluxes in complex terrain
- Atmospheric dynamics and land-use land-cover
- Interaction between tropical and extra-tropical phenomena

She has worked in Projects financed by Environment Canada and Univ of British Columbia at the Atmospheric Science Programme of the Dpt of Geography – University of British Columbia on the following topics:

- Photochemical smog (sources, sinks, transport)
- Spatio-temporal evolution of the atmospheric mixing layer and entrainment layer in complex terrain and coastline
- Sea breeze climatology and dynamics

## **DETAILED RESEARCH ACTIVITIES**

### **Appointments at the National Research Council of Italy (CNR)**

- 1988-2003 Full time Scientist at the Institute of Atmospheric Physics of CNR (IFA CNR) in Roma. Responsible for the Atmosphere Mesoscale Modelling.
- 2003–present Full time Senior Scientist at the Institute of Biometeorology of CNR (IBIMET CNR) in Roma. Responsible of the Climate Research Group of the Institute.

*For appointments in Institutions other than National Research Council see the following paragraphs.*

### **Air Pollution**

- 1986-1987 Post-Doc Fellowship at the Institute for Atmospheric Physics (IFA-CNR) on Air Radioactivity. Analysis of Air Radioactivity samples collected in the stations of the Italian National Network and statistical analysis of monitoring data. Modelling of transport and diffusion of radioactive air pollutants deriving from the Chernobyl accident.
- 1988 Stage at ENEL (Italian National Electric Board) in Milan. Application of a trajectory model to long range transport of radioactive air pollutants. Study of subgrid parameterization of diffusion and deposition processes to implement into a trajectory model.
- 1993-1995 Fellowship at the International Institute for Applied System Analysis (IIASA) in Laxenburg (Austria) for the development of an Integrated Assessment Model for tropospheric ozone over Europe. Work in collaboration with University of Oslo and EMEP center in Norway in the framework of UNFCCC. Coordination of data collection activity for the set up of an ozone data base from Western and Eastern European Countries. Research on subgrid parameterization of local scale atmospheric processes on the tropospheric ozone.
- 1995-1996 Research Associate at the Geography Dpt of the University of British Columbia (Vancouver - Canada) for Meteorological and photochemical modelling of severe ozone episodes in the Lower Fraser Valley, B.C. and development of an Observation Based Model (OBM) for the assessment of the of precursors.
- 1999-2000 Visiting Scientist at Research Institute of Applied Mechanics RIAM – Kyushu University in Fukuoka (Japan) research and modelling of meteorological scenarios on the East Asia, using a regional numerical model fully coupled with a chemical model for the transport and deposition of SO<sub>2</sub>, SO<sub>4</sub>, particulate and dust from the Gobi desert towards the Pacific Ocean.

### **Atmospheric and Ocean Dynamics Modelling**

- 1987 Modelling of Mediterranean Sea circulation at the Atmospheric Physics Group of Imperial College of London (UK).

- 1991, 1998,  
2001 Analytical and Numerical modelling of atmospheric perturbations induced by changes in the landscape and subgrid parameterization of the phenomenon at the Colorado State University in Fort Collins (COLO-USA).
- 1998, 1999,  
2000 Research at UBC (Canada) on the spatio-temporal evolution of the atmospheric Mixed Layer "MLD") in complex terrain and coastline.

**Climate variability and change**

- 2000–2003 Collaboration with Prof R.A. Pielke at the Dpt of Atmospheric Science of CSU on a National Science Foundation Project for research on land use and climate.
- 2003-present Climate variability of the EuroMediterranean region in the framework of several research projects, national (Climagri, Castelporziano, Arno and the approved Tempio and Climanimal) and international (CIRCE, MedCLIVAR).
- 2005–present West African Monsoon climatology and variability and its predictability in the framework of the EU AMMA-Integrated Project and of the Sahel Resources project.
- 2005–present Collaboration with Tel Aviv University and The Open University of Israel for research on weather types causing health risks due to heat stress and air pollution in the Mediterranean (Project financed by Environmental Ministry).
- 2007-present Scientist at NIWA in Auckland – New Zealand, for research on climate variability and change in the Southern Hemisphere

***She has been awarded with:***

- CNR – Short term mobility programme to visit Colorado State University – USA, University of British Columbia – CA (1997, 1999, 2001, 2005, 2006), NIWA – New Zealand (2009)  
NATO fellowships (1991, 1998)

***She is member of the following Professional Societies:***

- Associazione Geofisica Italiana, AGI.  
Società Italiana di Meteorologia Alpina, SIMA  
Società Meteorologica Subalpina  
European Geophysical Union, EGU  
European Meteorological Society  
American Geophysical Union, AGU  
American Physical Society  
American Meteorological Society, AMS

***She is Referee for several International Scientific Journals***

## **TEACHING AND TUTORING**

- 1996 Lecturer of Ensemble Forecast at the Geography Dpt of the University of British Columbia, Vancouver (Canada)
- 1998 – 1999 Lecturer of Planetary Boundary Layer at the Dpt of Environmental Sciences, Univ La Tuscia, Viterbo (Italy)
- 1999 Lecturer of Planetary Boundary Layer at the Dpt of Environmental Engineering of the University of Trento (Italy)
- 1999 Lecturer of Planetary Boundary Layer and Micrometeorology for the Regional Environmental Agency (ARSIAL) at UCEA, Roma (Italy)
- 1999 – 2000 and 2000 – 2001 Course of Climatology and Meteorology at the Dpt of Environmental Sciences, Univ La Tuscia, Viterbo (Italy)
- 2000 Lecturer of Turbulence closure at the Research Institute of Applied Mechanics (RIAM), Kyushu University, Fukuoka (Giappone)
- 2001 Lecturer of Climate of the Mediterranean and Desertification at the Engineering Faculty, Univ La Sapienza, Roma (Italy)
- 2003 – 2004, 2005 – 2006 Lecturer of Climate Dynamics and Regional Climatology at the Applied Meteorology Master, Univ of Florence, Florence (Italy)
- 2004 Lecturer of Climatology, Climate Change, Environment and Sustainable Development in several italian high schools in the framework of projects of Public Understanding of Science such as CLISCET and LEDER.
- 2003 – Activity of communication of scientific subjects and research results to general public on newspaper and media (radio and TVs).

## **Mentoring**

- 1990 – present Supervision of Master and Doctorate thesis at University of Rome “La Sapienza”

***Updated on: 23 October 2009***