



Giorgio Roth

Full professor

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Education and training

1987

PhD in Hydrodynamics

Hydrodynamic description of the erosional development of drainage patterns

University of Padova - Padova - IT

1982

Civil Engineer

110/110 cum laude

University of Genoa - Genoa - IT

Academic experience

2015 - 2018

Member Academic Senate

University of Genoa - Genoa - IT

2013 - 2018

Director - Department of Civil Chemical and Environmental Engineering

University of Genoa - Genoa - IT

2000 - ONGOING

Full Professor in Hydraulics Hydrology Hydraulic and Maritime Structures

University of Genoa - Genoa - IT

2000 - 2007

Director - CIMA - Centro di ricerca Interuniversitario in Monitoraggio Ambientale

University of Genoa and University of Basilicata - Genoa - IT

1997 - 2000

Director - CIMA - Centro di ricerca Interdipartimentale in Monitoraggio Ambientale

University of Genoa - Genoa - IT

1997 - 2000

Associate Professor

University of Genoa - Genoa - IT

1992 - 1997

Associate Professor

University of Perugia - Perugia - IT

1990 - 1992

Researcher

University of Genoa - Genoa - IT

Language skills

Italian

Mother tongue

English

Independent

Research interests

For all living beings on Earth water is an essential element: it means life. My education and career are entirely involved with water, starting from my undergraduate studies in Civil engineering, back in 1975. At that time, I selected hydrology, hydraulics and water resources as key elements of my education: central points to which I have tied all other components of the curriculum. Since then, going through PhD studies and all academic levels, from assistant to associate professor and up to the present full professor status, the focus of my career to the world of water, with all connected issues, remains central.

The competences I have developed can be viewed from different perspectives: education, basic and applied research, and research management. In my opinion, a strong relationship exists between these aspects: research should be performed within a well-defined scheme, taking into account application's results, including students' education and professionals' continuous training.

Education experience refers to more than 30 years of teaching graduate and undergraduate courses at the Universities of Genoa and Perugia and in a number of seminars and professional post-graduate courses.

My present research interests belong to the fields of Hydrology, Hydrometeorology, Hydroclimatology, Environmental monitoring, Remote sensing, and Flood risk identification and management.

In these fields, I share an intense international scientific cooperation with researchers of the University of Barcelona, the Ecole des Mines de Paris, Koeln University, Colorado State University, Princeton University, MIT, the European Space Agency, CNR and NASA. Research work is documented by more than 150 papers published in international refereed journals or in international conference proceedings.

My research activity was funded by the European Union (Environmental risk management and flood prevention for land management), the Italian National Research Council (Prediction of extreme hydro-meteorological events and hydrological response of small catchments), the Italian National

Civil Protection Department (Flood scenarios design), the Italian Insurance Association (An integrated flood risk management system for insurance and re-insurance purposes), the University of Genoa (Satellite data assimilation for the estimation of mass and energy land/atmosphere fluxes), the Regione Piemonte (Application of methodologies of hydro-meteorological forecast for environmental risk evaluation), the Regione Val d'Aosta (Rainfall and discharge regionalization and hydrological modelling for hydro-geological risk prevention), DHI Water and the Environment (DRiFt, a linear semi-distributed rainfall runoff model based on a geomorphologic approach, fully integrated in the MIKEZERO environment), and supported by the European Space Agency through the European contribution to the Global Precipitation Mission by NASA and JAXA.

Aspects related to developing Countries where tackled in teaching courses on Hydrological bases and Applied hydraulics, in both cases finalized to water resources management - WARREDOC International Advanced Courses on Water Resources Management - and on Water resources for developing Countries, Mini and micro hydro systems analysis and planning, Hydro energy in rural insulated areas and Appropriate machinery for developing Countries - SIES courses on Local energy planning, Mini hydro and Energy in agriculture. Within these courses, case studies were made on water resources quantification, allocation and use in developing Countries, including water policy and strategic optimization. The relevance of some aspects motivated further advances. This is the case for studies related to the planning of hydropower development, in which emphasis is on reliability aspects of small plants in developing Countries, and in studies investigating possible hydrological changes produced by land reclamation projects, with main reference to East African Countries. Specific applied research projects were developed for the design and construction of the hydraulic model of the Baardhere Dam, Somalia – funded by the Italian Minister for Foreign Affairs – and to identify suitable technologies for the irrigation of arid zones in Egypt – funded by the European Union.

For more than 10 years, from 1996 to 2007 with confirmation steps in 2000 and 2003, I have served as director of CIMA – Centro di ricerca Interuniversitario in Monitoraggio Ambientale – in those years a public research and technology cooperation body. From July 2013 to October 2018, with a confirmation step in 2015, I served as director of the Department of Civil, Chemical and Environmental Engineering, Polytechnic School of the University of Genoa and, from November 2015 to October 2018, as member of the Academic Senate of the University of Genoa.