

Education

Doctorate in "Idronomia" (Watershed management) in 1988.

In the period 1984-1990 he won some research grants for hydrological studies in Padova, at the Purdue University (Indiana, USA) and at the Hydrologic Engineering Centre in Davis (Ca., USA).

Degree in "Scienze Forestali" (Forest Engineering) at the University of Padova in 1983.

Academic Career

Since 2001 he is Associate Professor in the University of Udine, where presently teaches "Hydrology" and "Watershed Management". He was teacher of "Hydraulic in Agriculture", "Geomatics", and some other disciplines of the same sector.

He was "Ricercatore" (assistant professor) in the University of Padova since 1990.

Research Activity

Hydrology, hydrological resources management and soil conservation with specific emphasis on mountain watershed management in forestry and agricultural environments.

Snow Hydrology and Glaciology. Field research on the main glaciers of the Eastern Alps (Ortles, Cevedale, Canin, Montasio), development and use of mathematical models.

Use and development of Geographic Information Systems (GIS) for watershed characterization with morphology, hydrology and soil use. Design and realization of GIS software for hydrological purposes.

Analysis of hydrological effects of forest cover and soil use changes.

Hydrological Numerical Modelling for real time flow forecasting and for water resource assessment. Design and realization of distributed mathematical models, on GIS basis, for hydrological simulation and prevision.

Field research in experimental watershed and special field measurement campaigns in snow hydrology, erosion and sediment transport.

Some Research Jobs as responsible

Scientific director and Lead Partner of the INADEF project (Innovative Nowcasting and phenomenological based eArly warning system for DEbris Flow events), Interreg V Italy-Austria 2019-2022 Total budget € 869,122.70.

Research Unit leader on "Hydro-erosive processes monitoring and modeling using high-resolution surveys", PRIN 2010-2011

Coordinator of the research group on the development of ADB-Toolbox, open-source GIS software, for the Ministero dell'Ambiente e della Tutela del Territorio e del Mare, Portale Cartografico Nazionale. 2009-2012

Research head on "Definition of new technical and prescriptive rules" for the revision of the "Vincolo Idrogeologico" (Soil Conservation Rules) for the Regione Friuli Venezia Giulia (2005-2008).

Research Unit leader on "Survey, measuring and modelling techniques of the hydro-erosive effects of minor roads in experimental watersheds", PRIN2003. The study showed an early effective use of LiDAR data for land stability modelling (2003-2005).

Research Unit leader on "Hydro-geological processes inside the catchments" for the Regione Friuli Venezia Giulia within the European Project "Catchrisk", Interreg3B (2002-2005).

Research head on "Experimental project on the rearrangement of soil conservation rules in a small watershed of the Collio area (Gorizia)" for the Regione Friuli Venezia Giulia (2003-2004).

Some Research Jobs as fellow researcher

From 2006 to 2010 he contributed with the Cirgeo Interdepartmental Center of the University of Padua in the design and implementation of software relating to the National Cartographic Portal of the Ministry of the Environment, Land and Sea Protection.

He collaborated to software design and development and training courses design for the Portale Cartografico Nazionale of the Ministero dell'Ambiente, della Tutela del Territorio e del Mare. (2006-2007).

He participated to the research on GIS and Modelling Methods to outline a land fragility map for the Provincia Autonoma di Trento (2005-2006).

Between 2000 and 2002 he was the creator, designer and developer of the “HydroGrid2k2” software for the manipulation of raster-type GIS information in the hydrological field.

He was fellow of the INCO-C Research Network “Climate Impact on Water Resources and Dryland Agriculture - CLIWARDA” within the European programme International Cooperation with developing countries - DG XII INCO-DC (1999-2001).

He worked on low flows modelling and forecast on geomorphological basis for the “Parco Nazionale delle Foreste Casentinesi” and for the Centro Studi e Ricerche dell’ENEL (1999).

He participated to the project on Analysis of regional water resources and their management by means of numerical models and satellite remote sensing in Mendoza, Argentina - Science and Technology for Development for the item concerning the “Snow melt flow forecast in andean watershed around the Aconcagua” (1989-1991)

He was member of the “Gruppo Nazionale per la Difesa dalla Catastrofi Idrogeologiche” of the National Research Council, operative unit 3.24 (1986-1990).

Flood Forecasting Project within the Climatology and Natural Hazards Research Programme. (1985-1988)

He is the designer of the GIS software Woditem (Watershed Oriented Digital Terrain Model) of which he made the first version in 1984 and the first version for Windows in 1995.

Co-author of the drafting of the AHM (An Hydrologic Model) calculation code derived from a complete revision of the Stanford Watershed Model IV basin hydrological model to adapt it to application in Alpine basins (1983-84).

Member of the working group coordinated by prof. Sergio Fattorelli who has carried out numerous applications of continuous hydrological modeling in alpine basins (1983):

Member of the research group coordinated by prof. George Fleming for the revision of the Strathclyde continuous hydrological model in view of its application to flood forecasting in real time on the Piave and Cordevole basins. (1982-84)

Other Scientific Roles

He is a member of the Italian Glaciological Committee.

He was a member of the Associazione Italiana di Idronomia until its dissolution in 2016.

He was a reviewer of PRIN 2004 projects and of various scientific projects funded by the Universities of Padua, Udine and Bolzano.

He is regularly reviewer of publications for international journals including: Journal of Hydrology, Annals of Glaciology, Journal of Glaciology, Geomorphology, Natural Hazards and Earth System Sciences, Science of the Total Environment, Journal of Geophysical Research, Journal of Agricultural Engineering, European Journal of Remote Sensing, Italian Journal of Engineering Geology and Environment, Water.

Some “third mission” activities

President and co-founder in 2007 of the company “Geomatica & Ambiente” (Geomatics and Environment) that was an academic spin-off of the Università of Padova (2007-2014).

Consultant for many companies in environmental projects related with hydrological modelling, monitoring networks and Geographic Information Systems.

Expert Consultant of the European Union with many missions in South-America (Paraguay, Bolivia, Argentina) for Geographic Information System design and measurement networks design.