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- EDUCATION

University of Bologna (Italy). Post-Doctoral fellowship, March 2001-January 2002.

Title of the research project: “Design Storm Estimation Using Regional Frequency Analysis Techniques”. Research aimed at improving the reliability of regional estimates of the design storm in northern-central Italy.

Polytechnic of Milan (Italy). PhD in Hydraulic Engineering, March 2001.

Title of the dissertation: “Criteria of Hydrological Similarity and Index-Flood Estimation Techniques for Regional Flood Frequency Analysis”. Research focused on the development of innovative and reliable regionalization techniques for estimating the design flood at ungauged sites.

University of Bologna (Italy). Undergraduate and Masters Degree in Civil Engineering with a major in Environmental Engineering, October 1996.

Title of the dissertation: “Hydrological and Hydraulic Study of the Enza Catchment”. Received 100/100, magna cum laude and Lion’s Club Emilia-Romagna (Italy) prize for the 1996 best graduation thesis on hydro-geological hazard assessment.

- CURRENT POSITION

Since February 2002 - Assistant professor at the Department of Civil Engineering of the University of Bologna.

- INTERNATIONAL EXPERIENCES

From June 2003 – Visiting scholar at the Department of Civil and Environmental Engineering of Tufts University, Medford, MA, USA, under the supervision of Prof. Richard, M. Vogel. The research activity focuses on the development of a stochastic model of flow duration curves.

September 1999-January 2000 – Visiting scholar at the Department of Civil Engineering of the University of Waterloo, ON, Canada, under the supervision of Prof. Donald, H. Burn. During this time period an extensive analysis was developed, assessing the descriptive capability of numerous measures of hydrological similarity among catchments to be used to delineate homogeneous pooling groups for regional flood frequency analysis.

- SCIENTIFIC ACTIVITY

Dec. 2002 Applied for a grant presenting a research project on the development of a stochastic model of flow duration curves. The University of Bologna funded the project and the research activities are on going under the supervision of Prof. Richard, M. Vogel (Tufts University, Medford, MA, USA).

1998-2003 Assistant researcher in the National and European research projects active at the University of Bologna (Italy), coordinating the research activities pertinent to statistical hydrology and regional frequency analysis, development of GIS hydrological applications. Designer and editor of chapters of the projects’ final reports relevant to the above mentioned activities.

1999-2003 Author and co-author of several original scientific studies on design storm or design flood estimation techniques and regionalisation of hydrological information. These studies have been published in national and international journals and orally presented at national and international conferences (see below).

2000-2003 Reviewer for several international journals (*J. Hydrol*, Elsevier; *Hydrol. Sci. J.*, IAHS; *Phys. Chem. Earth*, Elsevier and *HESS*, EGS)

Oral presentations of scientific papers in international conferences:

1999 “On the use of indirect methods for index flood estimation” (by Castellarin, Brath & Franchini, *Geophysical Research Abstracts*, 1(3), 867, EGS, 1999) - XXIV General Assembly of the European Geophysical Society, The Hague (the Netherlands), 19 - 23 April 1999;

- 2000 “Flood frequency analysis for gauged and ungauged sites using a hierarchical region of influence approach” (by Castellarin, Burn, & Brath, Geophysical Research Abstracts, **2**, 8, EGS, 2000) - XXV General Assembly of the European Geophysical Society, Nice (France), 25 al 29 Aprile 2000;
- “Local and regional assessment of the possible presence of non-stationarity in extreme rainfall” (by Castellarin, Brath & Montanari, Geophysical Research Abstracts, **2**, 23, EGS, , 2000) - XXV General Assembly of the European Geophysical Society, Nice (France), 25 al 29 Aprile 2000;
- “Investigating the descriptive capability of catchment similarity indexes for flood frequency analysis” (by Castellarin, Burn & Brath, Eos, Transactions, **81**(48), F444, AGU, 2000.) – AGU 2000 Fall Meeting, San Francisco (California), 15-19 December 2000;
- “Assessing the dependence on climatic and land-use factors of mean annual soil erosion at regional scale” (by Brath, Castellarin & Montanari, Eos, Transactions, **81**(48), F521, AGU 2000) – AGU 2000 Fall Meeting , San Francisco, California 15-19 December 2000;
- 2001 “Assessing the dependence on land use change of annual average soil losses” (by Brath, Castellarin & Montanari, Geophysical Research Abstracts, **3**, 3068, EGS, 2001) - XXVI General Assembly of the European Geophysical Society, Nice (France), 26 - 30 March 2001;
- 2002 “Descriptive capability of seasonality indicators for regional frequency analyses of flood and rainfall” (by Castellarin & Brath, International Conference on Flood Estimation - Abstract, 65, 2002) International Conference on Flood Estimation, Bern (Switzerland), 6 - 8 March 2002.

- ACADEMIC RESPONSIBILITIES

- 1998-2003 University level lectures and exams at the Universities of Bologna, Modena and Milan. Course topics included: Applied Statistics, Open Channel Hydraulics, Hydrology, and River Engineering Works.
- 1998-2003 Supervisor of several graduation theses dealing with flood risk assessment, open-channel hydraulics, hydraulics of sediment transport, empirical evaluation of rainfall Area-Reduction-Factor (ARF), regionalisation of hydrological extremes, and regional scale implementation of the Universal Soil Loss Equation within a Geographic Informative System (GIS).
- 1998-2003 Member of the Commission for Professional Engineering Licensing at University of Bologna (Hydraulic engineering section).

- PROFESSIONAL EXPERIENCES

- 2000-2001 Engineering Consultant for DISTART - University of Bologna. Development of Geographic Informative System within a project describing land-use dynamics in the last four decades for Bologna’s Administrative District to evaluate anthropogenic effects on hydrological processes (mainly erosion and rainfall-runoff transformation).
- 2000 Freelance Consulting Engineer, developing a study for the assessment of the hydrological risk of the Aja Dam (Terni, Italy).
- 1996-1997 Consulting Engineer at DISTART – University of Bologna. Flood risk assessment and hydraulic modeling of the rivers Reno and Samoggia. Study funded by the Super-regional Authority for the Reno River, Emilia-Romagna Administrative Region.

Professional Licensed Engineer since February 1997 (Bologna – Italy, Reg. #:42494).

- FOREIGN LANGUAGES

Italian mother tongue and fluent in English.

- COMPUTER EXPERIENCE

- Op. Sys.: DOS, Win. 9x, Win. 2000, Win. 2000 Server - Terminal Edition
- Software: Experience with many Geographic Informative Systems (GIS) (Mapinfo, ArcView, Surfer), statistical and mathematical programs (STSS, S-plus, Matlab), experience with flood-routing hydraulic models (MIKE-11, Hec-Ras) and rainfall-runoff models (TOPMODEL, ARNO).
- Languages: FORTRAN 77 and 90, Avenue (Arcview - ESRI), Visual Basic, Matlab Language

- SELECTED ENGLISH PUBLICATIONS:

- Brath, A., Castellarin, A. & A. Montanari, At-Site and Regional Assessment of the Possible Presence of Non-Stationarity in Extreme Rainfall in Northern Italy, *Physics and Chemistry of the Earth (B)*, Vol. 26(9), pp. 705-710, 2001.

- Castellarin, A., Burn, D. H. & A. Brath, Assessing the Effectiveness of Hydrological Similarity Measures for Regional Flood Frequency Analysis, *Journal of Hydrology*, Vol. 241(3-4), pp. 270-285, 2001.
- Brath, A., Castellarin, A., Franchini, M. & G. Galeati, Estimating the Index Flood Using Indirect Methods, *Hydrological Sciences Journal*, Vol. 46 (3), pp. 399-418, 2001.
- Brath, A., Castellarin, A. & A. Montanari, Assessing the Effects of Land-Use Changes on Annual Average Soil Losses *Hydrology and Earth System Sciences HESS*, Vol. 6(2), p 255-265, 2002.
- Brath, A., Castellarin, A. & A. Montanari, Assessing the Reliability of Regional Depth-Duration-Frequency Equations for Gaged and Ungaged Sites, submitted to *Water Resour. Res.* June 2003, under review.
- Castellarin, A., Vogel, R.M. & A. Brath, A Stochastic Index-Flow Model of Flow Duration Curves, submitted to *Water Resour. Res.* July 2003, under review.

- REFERENCES:

Dr. Armando Brath, DISTART – Università di Bologna, Viale Risorgimento, 2, I-40136, Bologna ITALY, armando.brath@mail.ing.unibo.it

Dr. Donald H. Burn, Civil Engineering, University of Waterloo, 200 University Ave. W., Waterloo (ON), Canada, dhburn@sunburn.uwaterloo.ca

Dr Alberto Montanari, DISTART – Università di Bologna, Viale Risorgimento, 2, I-40136, Bologna ITALY, alberto.montanari@mail.ing.unibo.it

Dr. Renzo Rosso, Politecnico di Milano, P.zza Leonardo da Vinci, 32, I-20133 Milan, Italy, renzo.rosso@polimi.it

Dr. Ezio Todini, Università di Bologna - Dipartimento di Scienze della Terra e Geologico Ambientali, Via Zamboni, 67 – I-40126 – Bologna, ITALY, todini@geomin.unibo.it