

Prof. Baldassare Bacchi

Università degli Studi di Brescia (University of Brescia – I)

Dipartimento/Department: DICATAM-Dipartimento di Ingegneria Civile, Architettura, Territorio, Ambiente e di Matematica.

Ruolo/Position: Ordinario di Costruzioni idrauliche (Full Prof. Of Hydraulic Structures)

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Settore scientifico-disciplinare di appartenenza: ICAR/02-Costruzioni idrauliche e Marittime e Idrologia. (Scientific sector in the Italian University classification system: ICAR/02-Hydraulic structures and Hydrology)

Teaching:

2012-present Hydraulic Infrastructures for the Edile-Architettura five years course of Master degree, at the University of Brescia, Italy

2010-present Hydraulic Structures for Environmental & Civil Engineering for two years Master degree, at the University of Brescia, Italy

2005-2010 Applied Hydraulics for Edile-Architettura five years course of degree, at the University of Brescia, Italy

2007-2010 Hydraulic Infrastructures for Edile-Architettura five years course of degree, at the University of Brescia, Italy

2007-2010 Hydraulic Structures for Building Engineering, two years course for Master degree, at the University of Bergamo, Italy

CURRICULUM VITÆ

Full Professor in Hydraulic Structures at the University of Brescia since 1991 where he coordinates an active research team in the field of Water Engineering. He was Director of the Department of Civil Engineering from 1995 until 2002. Before was Senior Reseracher and Associate Professor at the Polytechnic of Milan (1981-1990).

His teaching and research activities are focused in the fields of Hydrology and Hydraulic Structures. He is author of about 130 publications: about 25 of these are on international Journals with referee. Scientific Manager of some MURST 40% research projects, coordinator of the 1.33 Research Unit of the CNR-GNDCI (National Research Council-National Group for the Prevention of Natural Hazards). Project Coordinator of the EU-funded research project named "RAPHAEL-Runoff and Atmospheric Processes for Flood Hazard forecasting and Control" that involved eleven partners from Europe and Canada.

Scientific cohordinator of several research projects funded with Public Offices and Private Companies. Member of the Scientific Steering Committee of the international research project MAP-Mesoscale Alpine Programme and of several scientific association:

IAHS – AISH: International Association of Scientific Hydrology

EGU – European Geosciences Union

AGU – American Geophysical Union

All – Associazione Idrotecnica Italiana

CINFAI – Brescia Univ. Coordinator of the RU

SII-Società Idrologica Italiana, Socio fondatore e membro del Drettivo

CSDU (President) –Study Center on Urban hyDraulics

ASGDM (President) –Scientific Association ‘Giulio De Marchi’

Research fields

Water resources estimate and management, Hydrology of floods, Floods mitigation methods, Stochastic Hydrology applied to extreme events (floods and heavy rainfalls), Urban Hydrology, Hydraulic works design and planning, Flood forecasting hydrological models, Soil erosion and transport, Spatially distributed models, Infiltration, Multidimensional CDF, Derivate distribution analysis in Hydrology.

H-Index: 10

Selected publications

- MAZZOLENI M., BACCHI B., BARONTINI S., DI BALDASSARRE G., PILOTTI M., RANZI R. (2013). Flooding hazard mapping in floodplain areas affected by piping breaches in the Po River, Italy, *Journal of Hydrologic Engineering*, vol. [http://dx.doi.org/10.1061/\(ASCE\)HE.1943-5584.0000840](http://dx.doi.org/10.1061/(ASCE)HE.1943-5584.0000840), p. 1-45, ISSN: 1084-0699,
- BALISTROCCHI M., BACCHI B., (2011). Modelling the statistical dependence of rainfall event variables through copula functions, *Hydrol. Earth Syst. Sci.*, 15, 1959-1977, doi:10.5194/hess-15-1959-2011
- PILOTTI M, TOMIROTTI M, VALERIO G, BACCHI B (2010). Simplified Method for the Characterization of the Hydrograph following a Sudden Partial Dam Break, (ASCE), *J. Hydr. Eng.*, Vol. 136(10), 693-704, ISSN: 0733-9429
- BALISTROCCHI M, GROSSI G, BACCHI B. (2009). An analytical probabilistic model of the quality efficiency of a sewer tank. *Water Resources Research*, vol. 45, W12420; p. 1-13, ISSN: 0043-1397, doi: 10.1029/2009WR007822
- PILOTTI M, TOMIROTTI M, GRASSIA D, BACCHI B. (2009). Formulazione semplificata in forma adimensionale dell'idrogramma conseguente al crollo parziale di uno sbarramento di ritenuta. *L'ACQUA*, vol. 2; p. 21-36, ISSN: 1125-1255
- RANZI R, BACCHI B., CEPPI A, CISLAGHI M, EHRET U, JAUN S, MARX A, HEGG C, ZAPPA M (2009). Real-time demonstration of the hydrological ensemble forecast in MAP D- PHASE. *LA HOUILLE BLANCHE*, vol. 5, ISSN: 0018-6368
- BACCHI B., BALISTROCCHI M, GROSSI G (2008). Proposal of a semi-probabilistic approach for storage facility design. *URBAN WATER JOURNAL*, vol. 5(3); p. 195-208, ISSN: 1573-062X, doi: 10.1080/15730620801980723
- BARONTINI S, RANZI R, BACCHI B. (2007). Water dynamics in a gradually nonhomogeneous soil described by the linerized richards equation. *WATER RESOURCES RESEARCH*, vol. 43, ISSN: 0043-1397, doi: 10.1029/2006WR005126
- RANZI R, ZAPPA M, BACCHI B. (2007). Hydrological aspects of the Mesoscale Alpine Programme: findings from field experiments and simulations. *QUARTERLY JOURNAL OF THE ROYAL METEOROLOGICAL SOCIETY*, vol. 133, Part B, Issue 625; p. 867-880, ISSN: 0035-9009, doi: 10.1002/qj.68
- RANZI R., BACCHI B., ZAPPA M (2005). Hydrological aspects of the Mesoscale Alpine Programme: finding from field experiments and simulations. *CROATIAN METEOROLOGICAL JOURNAL*, vol. 40; p. 134-137, ISSN: 1330-0083
- BACCHI B., R. RANZI (2003). Hydrological and meteorological aspects of floods in the Alps: an overview. *HYDROLOGY AND EARTH SYSTEM SCIENCES*, vol. 7(6); p. 784-798, ISSN: 1027-5606
- RANZI R., BACCHI B., GROSSI G. (2003). Runoff measurements and hydrological modelling for the estimation of rainfall volumes in an alpine basin. *QUARTERLY JOURNAL OF THE ROYAL METEOROLOGICAL SOCIETY*, vol. 129-B; p. 653-672, ISSN: 0035-9009
- RANZI R., BOCHICCHIO M., BACCHI B. (2002). Effects on floods of recent afforestation and urbanisation in the Mella River (Italian Alps). *HYDROLOGY AND EARTH SYSTEM SCIENCES*, vol. 6(2); p. 239-265, ISSN: 1027-5606
- ARBELAEZ A.C., BACCHI B., RANZI R., ARANGO H. (2000). Aplicación de la técnica "wavelets" a un campo de precipitación. *AVANCES EN RECURSOS HIDRAULICOS*, vol. 7; p. 52-61
- RANZI R, GROSSI G., BACCHI B. (1999). Ten years of monitoring areal snowpack in the Southern Alps using NOAA-AVHRR imagery, ground measurements and hydrological data. *HYDROLOGICAL PROCESSES*, vol. 13; p. 2079-2095, ISSN: 0885-6087
- BACCHI B., PILOTTI M. (1997). Distributed evaluation of the contribution of soil erosion to the sediment yield from a watershed. *EARTH SURFACE PROCESSES AND LANDFORMS*, vol. 22; p. 1239-1251, ISSN: 0197-9337
- BACCHI B., RANZI R. (1996). On the derivation of the areal reduction of storms. *ATMOSPHERIC RESEARCH*, vol. 42; p. 123-135, ISSN: 0169-8095
- BACCHI B., RANZI R., BORGA M. (1996). Recognition of the statistical character of spatial patterns of rainfall cells. *JOURNAL OF GEOPHYSICAL RESEARCH*, vol. 101; p. 26277-26286, ISSN: 0148-0227
- BACCHI B., KOTTEGODA N.T. (1995). Identification and calibration of spatial correlation patterns of rainfall. *JOURNAL OF HYDROLOGY*, vol. 165; p. 311-348, ISSN: 0022-1694