Mario L.V. Martina
Curriculum Vitae

Brief summary

I'm Associate Professor in Hydrology at the University School for Advanced Studies IUSS Pavia in Italy. My research interests include: risk modelling for hydrological hazards, applications of hydrological and statistical models in the insurance and re-insurance industry, stochastic hydrology, rainfall-triggered landslides, paleo-hydrology. I teach both to undergraduates and to master/PhD students courses on hydrology and catastrophe risk modelling. I've supervised and I'm currently supervising several PhD students. Since last year I'm the head of the Uncertainty and Risk Assessment Department within my university.

I graduated as civil environmental engineer, got the PhD in hydrological modelling and worked as post-doc for several years at the University of Bologna, Italy. During that period, I've spent several periods abroad (USA and UK) as visiting researcher.

After my post-doc and before being a university researcher, I worked as a professional engineer in the fields of environmental engineering, insurance risk engineering and loss adjustment. During that period, I gained experience in the design of renewable (hydro, wind and solar) energy plants, in natural hazards and risk assessment for the re-insurance industry and in insurance loss adjustment of both natural catastrophe and technological claims.

Since 2014 I worked at IUSS as researcher before and as Associate Professor after.

In 2014 I set up with other colleagues a company (Risk Engineering + Design) which develops natural catastrophe risk models and manages operational systems for natural disaster risk financing.

Education

2004 Phd in Physically-based modelling for the environmental protection at University of Bologna

2000 MSc in Risk Engineering and Loss Adjustment at Cineas-Polytechnic of Milan, awarded best fellow

2000 Laurea (5-year) degree summa cum laude in Civil Environmental Engineering at University of Bologna

ACADEMIC POSITIONS

2017 – curr.   Head of the Uncertainty and Risk Assessment Department at University School for Advanced Studies IUSS Pavia, Italy

2017 – curr.   Associate Professor in Hydrology at University School for Advanced Studies IUSS Pavia, Italy

2014 – 2017   Researcher in Hydrology at University School for Advanced Studies IUSS Pavia, Italy

2008 – 2011   Willis Research Fellow at the University of Bologna, Italy

2004 – 2008   Postdoc at the University of Bologna, Italy

TEACHING EXPERIENCE

2015 – curr.   Near real-time natural disaster loss estimation tool for PhD students at University School of Advanced Studies IUSS Pavia

2015 – curr.   Hydrological modelling and risk analysis for undergraduate students in Civil Engineering at University of Pavia

2014 – curr.   Hydrological risk modelling for PhD students at University School of Advanced Studies IUSS Pavia

2014 – curr.   Natural hazard catastrophe modelling and risk assessment for undergraduate students in Mathematics, Physics and Engineering at University School of Advanced Studies IUSS Pavia

2011 – curr.   Extreme Value Theory and Practice in Hydrological Applications for PhD students at University School of Advanced Studies IUSS Pavia

2007 – 2017   Hydrology and hydrological risk for undergraduate students of Applied Geological Sciences at University of Bologna

NON-ACADEMIC WORK EXPERIENCE

2011 – 2014   PE, Risk engineer and loss adjustment for natural and technological claims

2008 – 2011   Natural hazard risk modelling for Willis Ltd, London Uk

PUBLICATIONS

Figueiredo R., Schröter, K., Weiss-Motz, A., Martina, M. L. V., and Kreibich, H.: Improving accuracy and quantifying uncertainty in flood loss estimations through the use of multi-model ensembles, Nat. Hazards Earth Syst. Sci. Discuss., https://doi.org/10.5194/nhess-2017-349, 2017.

Dell'Acqua F., Iannelli G.C., Torres M.A., Martina M.L.V., A Novel Strategy for Very-Large-Scale Cash-Crop Mapping in the Context of Weather-Related Risk Assessment, Combining Global Satellite Multispectral Datasets, Environmental Constraints, and In Situ Acquisition of Geospatial Data. Sensors, 18(2), 591, https://doi.org/10.3390/s18020591, 2018

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Figueiredo, R., Martina M.L.V., Using open building data in the development of exposure data sets for catastrophe risk modelling. Natural Hazards and Earth System Sciences 16.2: 417-429, 2016

Dottori F., Martina M.L.V., Figueiredo R., A methodology for flood susceptibility and vulnerability analysis in complex flood scenarios, Journal of Flood Risk Management, DOI: 10.1111/jfr3.12234, 2016

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Berti M., Martina M.L.V., Franceschini S., Pignone S., Simoni A., Pizziolo M., Implementation of a Probabilistic Model of Landslide Occurrence on a Civil Protection Alert System at Regional Scale. In: Lollino G. et al. (eds) Engineering Geology for Society and Territory - Volume 2. Springer, 2015

Golian, S., Yazdi, J., Martina, M.L.V. and Sheshangosht, S., A deterministic framework for selecting a flood forecasting and warning system at watershed scale. Journal of Flood Risk Management, 8(4), pp.356-367, 2015

Berti M., Martina M.L.V., Franceschini S., Pignone S., Simoni A., Pizziolo M., Implementation of a Probabilistic Model of Landslide Occurrence on a Civil Protection Alert System at Regional Scale. Engineering Geology for Society and Territory, VOL 2: Landslide Processes, 2014

Cantelli L., Picotti V., Martina M.L.V., From wetland to desert: A Geomorphologic Approach to the Eblaite Chora, Ebla and its Landscape Early State Formation in the Ancient Near East. p. 317-323, ISBN: 978-161132-228-6, 2013

Berti M., Martina M.L.V., Franceschini S., Pignone A., Simoni A., Pizziolo M., Probabilistic rainfall thresholds for landslide occurrence using a Bayesian approach, Journal of Geophysical Research, 117, pp. 1 – 20, 2012

Berti M., Crucil G., Degetto M., De Vido G., Gregoretti,C., Martina M.L.V., Simoni A., Hydrologic response in the initiation area of the Dimai debris flow (Dolomites, Italian Alps), Volume 21, Issue part 1, 2012, Pages 564-566, Rendiconti Online Societa Geologica Italiana, 2012

Terribile F., Coppola A., Langella G., Martina M.L.V., Basile A., Potential and limitations of using soil mapping information to understand landscape hydrology, Hydrol. Earth Syst. Sci., 15, 3895-3933, 2011

Martina M.L.V., Todini E., Liu Z., Preserving the dominant physical processes in a lumped hydrological model, Journal of Hydrology, Volume 399, Issues 1-2, Pages 121-131, 2011

De Waele J., Martina M.L.V., Sanna L., Cabras S., Cossu A., Flash flood hydrology in karstic terrain: Flumineddu Canyon, central-east Sardinia, Geomorphology, Volume 120, Issues 3-4, Pages 162-173, 2010

De Waele, J., Martina, M.L.V., Sanna, L., Cossu, A., Cabras, S., The use of flash flood events in fluviokarst canyons to evidence loosing reaches through hydrological modeling and empirical peak flow estimation, Volume 11, Issue 2, Pages 586-587, Rendiconti Online Societa Geologica Italiana, 2010

Dottori, F., Martina, M. L. V., and Todini, E., A dynamic rating curve approach to indirect discharge measurement, Hydrol. Earth Syst. Sci., 13, pp. 847-863, 2009

Martina M.L.V., Todini E., Bayesian rainfall thresholds for flash flood guidance, Advances in hydrological forecasting and warning, in Flood Risk Management: Research and Practice, Taylors and Francis Group, ISBN: 978-0-415-48507-4, Oxford (UK), 2009

Borga M., Creutin J.D., Gaume E., Martina M.L.V., Todini E., Thielen J., Flash flood risk management: Advances in hydrological forecasting and warning, Advances in hydrological forecasting and warning, in Flood Risk Management: Research and Practice, Taylor and Francis Group, ISBN: 978-0-415-48507-4, Oxford (UK), 2009

Martina M.L.V., Todini E., Libralon A., Rainfall Thresholds for Flood Warning Systems: A Bayesian Decision Approach, Hydrological Modelling and the Water Cycle. doi: 10.1007/978-3-540-77843-1_9, 2008

Martina M.L.V., Todini E., Watershed Hydrological Modeling: Toward Physically Meaningful Processes Representation. In: Hydrological Modelling and the Water Cycle. doi: 10.1007/978-3-540-77843-1_10, 2008

Mantovan P., Todini E., Martina M.L.V., Reply to comment by Keith Beven, Paul Smith and Jim Freer on "Hydrological forecasting uncertainty assessment: Incoherence of the GLUE methodology", Journal of Hydrology, Volume 338, Issues 3–4, Pages 319-324, ISSN 0022-1694, https://doi.org/10.1016/j.jhydrol.2007.02.029, 2007,

Martina M.L.V., Entekhabi D., Identification of runoff generation spatial distribution using conventional hydrologic gauge time series, Water Resources Research, vol.42, W08431, doi:10.1029/2005WR004783, 2006

Martina M.L.V., Todini E., Libralon A., A Bayesian decision approach to rainfall thresholds-based flood warning, Hydrology and Earth System Sciences, 10, 1-14, 2006

Liu Z., Martina M.L.V., Todini E., Flood forecasting using a fully distributed model: Application of the TOPKAPI model to the Upper Xixian Catchment, Hydrology and Earth System Sciences, Volume 9(4), pp 347-364,68, 2005

SCIENTIFIC REVIEW

Water Resource Research, Journal of Hydrology, Natural Hazards, Environmental Software and Modelling, Hydrology and Earth System Sciences, Natural Hazards and Earth System Sciences, Urban Water Journal, Journal of Hydrologic Engineering, Journal of Flood Risk Management, Hydrology Research, Advances in Water Resources, Hydrological Processes