DANIELA MOLINARI
Curriculum Vitae

PERSONAL INFORMATION

Date of birth: 15-06-1980
Nationality: Italian
Address: Via Cesare Battisti 7, 21050
Lonate Ceppino (VA) – Italy
Telephone number: +39 02 2399 6206 (work)
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WORK EXPERIENCE

From February 2021 onward
Associate Professor at Politecnico di Milano (Milan, Italy)
Research field: Flood risk assessment and management
National scientific qualification to function as full professor from February 2023

Institutional roles:
From April 2020 onward: Delegate for communication of the Department of Civil and Environmental Engineering

From May 2026 onward: Member of the academic board of the PhD programme in Environmental and Infrastructure Engineering

July 2015 – February 2021
Researcher (RTD A/B) at Politecnico di Milano (Milan, Italy)
Research field: Flood risk assessment and management

March 2011 – July 2015
Post-doc researcher at Politecnico di Milano (Milan, Italy)
Research field: Flood risk assessment and management

January 2007-December 2010
PhD student at Politecnico di Milano (Milan, Italy)
Research field: design and verification of Flood Early Warning Systems

January 2006-December 2006
Temporary researcher at Politecnico di Milano (Milan, Italy)
Research field: Natural and man-made risks assessment and management (ref. to publications J2, b1)

EDUCATION AND TRAINING

February 2011:
PhD in Hydraulic Engineering at Politecnico di Milano (Milan, Italy)
Title of the thesis: Flood Early Warning Systems performance: an approach at the warning chain perspective (ref. to publications J3, J5, B1, P1, P2, P3)

October 2005
Degree (with honors) in Environmental Engineering at Politecnico di Milano (Milan, Italy)
Title of the thesis: Fire numerical models for tunnels safety" (**Award** "The best graduates of Politecnico di Milano" a.a. 2004/2005)

INTERNATIONAL EXPERIENCE

February 2009 -May 2009:
Research visitor at RMIT University - Centre for Risk and Community Safety (Melbourne, Australia)
Research topic: Early Warning Systems Effectiveness (ref. to publications J3, J7)
Supervisor: prof. John Handmer

February 2003 - April 2003:
Student visitor at University of Exeter – Centre for Water system (Exeter, UK)
Research topic: computational fluid dynamics – combustion (ref. to publication J1)
Supervisor: prof. Gavin Tabor

TEACHING

From 2015 onward
Professor at Politecnico di Milano (Milan, Italy)
Courses:
From 2015/16 onward Fluid Mechanics - Bachelor of Science in Mechanical Engineering
From 2018/19 onward Laboratory of emergency planning – Master of Science in Civil Engineering for Risk Mitigation (International programme)

2006-2015
Assistant professor at Politecnico di Milano (Milan, Italy)

from 2018 onward
(co) Supervisor/tutor of PhD thesis
2017 - 2021 Development of a multi-scale model for the estimation of flood damage, M. Galliani – PhD in Environmental and Infrastructure Engineering
2019 - 2023 Flood damage assessment to power grids, P. Asaridis - PhD in Environmental and Infrastructure Engineering
2021- 2025 Flood damage assessment for Italian enterprises: tools for evaluating direct and indirect damages at the microscale., M. Ballocci, PhD in in Sustainable Development and Climate change
2022 - 2025 A Multi-Criteria Decision Analysis procedure for the evaluation of flood risk mitigation measures, A. Gallazzi - PhD in Environmental and Infrastructure Engineering
From 2020 Hydraulic inspections of bridges: methodology and operational protocol, M. D'Angelo - PhD in Environmental and Infrastructure Engineering
From 2022 Development of flood damage assessment tools for the Italian Context, S. Rrokaj - PhD in Environmental and Infrastructure Engineering

from 2010 onward
Supervisor of Thesis:
2016-2017 *Affidabilita' delle stime di danno alluvionale al variare del livello di conoscenza della vulnerabilità,* M. Galliani – Master of Science in

Environmental and land planning Engineering

2016-2017 *AGRIDE: un modello esperto per la valutazione del danno alluvionale al settore agricolo*, A. Gallazzi – Master of Science in Environmental and land planning Engineering

2017-2018 *Flood Damage Assessment in Support of the Definition of Risk Mitigation Strategies: The Case of Lodi*, E. Gattai - Master of Science in Civil Engineering for Risk Mitigation

2017-2018 Implementazione e sviluppo del modello AGRIDE per la valutazione del danno alluvionale al settore agricolo, P. Pituello - Master of Science in Environmental and land planning Engineering

2018-2019 The Flood damage model repository – an opportunity to bridge knowledge gaps on flood damage assessment tools, I. Bombelli - Master of Science in Environmental and land planning Engineering

2018-2019 La modellazione della rete di trasporto stradale a supporto della gestione del rischio alluvionale, M. Frattari - Master of Science in Civil Engineering

2019-2020 Adaptation of an Italian flood damage model: INSYDE, to the Wallon Region – Belgium, D. Rodriguez Castro - Master of Science in Civil Engineering for Risk Mitigation

2019-2020 A modelling approach to support the emergency management in Health Care Facility in case of flood, D. Teofilo - Master of Science in Civil Engineering for Risk Mitigation

2020-2021 An empirical flood mortality model using random forest algorithm, M. Yazdani, - Master of Science in Civil Engineering for Risk Mitigation

2021-2022 Flood damage model: Development of INSYDE in the Po River basin, G.G. Huayra Mena , - Master of Science in Civil Engineering for Risk Mitigation

2021-2022 Sviluppo del modello di danno alluvionale AGRIDE-c per le colture orticole nell'ambito del distretto idrografico del fiume Po, V. Caldano - Master of Science in Environmental and land planning Engineering

2021-2022 Potenzialità e limiti del database AIDA a supporto della valutazione del danni alluvionali, A. Beraldi - Master of Science in Environmental and land planning Engineering

2022-2023 Flood hazard and risk assessment in data scarce regions: the case of the Metuge district in northern Mozambique, A.M. Rotaro, C.D. Paz Idarraga - Master of Science in Civil Engineering for Risk Mitigation

2022-2023 A methodology for the assessment of the integrated vulnerability of Italian residential buildings with respect to seismic risk, flood risk and energy efficiency, V. Sansoni - Master of Science in Civil Engineering

2023-2024 Tools for the survey and evaluation of integrated vulnerability of residential buildings in the Abiod Valley, A. Kurt - Master of Science in Civil Engineering for Risk Mitigation

2023-2024 Flood Damage Assessment in support of floodplain management: the case of the Po River, G. Treglia - Master of Science in Environmental and land planning Engineering and S.P. Muñoz Rodríguez - Master of Science in Civil Engineering for Risk Mitigation Master of Science in Civil Engineering for Risk Mitigation

2023-2024 Comprehensive approach for effective emergency planning: application to the Italian Red Cross, F. De Vito - Master of Science in Civil Engineering for Risk Mitigation Master of Science in Civil Engineering for Risk Mitigation

2024-2025 Sensitivity analysis of flood risk estimation on hazard and damage models – application to insurance premiums in Italy, L.A. Orozco Arquez - Master of Science in Civil Engineering for Risk Mitigation

2024-2025 La validazione dei modelli di danno italiani mediante l'uso di dati empirici: l'alluvione del Misa 2022, C. Valente - Master of Science in Environmental and land planning Engineering

2025-2026 Validation of a foreign flood damage model in the italian context
M. Ambrosanio – Master of Science in Environmental Engeneering – Geoinformatics Engineering

2025-2026 A multi-criteria decision analysis for prioritizing flood risk reduction strategies:

The case of Lomellina, Italy, V. Quiceno Perez - Master of Science in Civil Engineering for Risk Mitigation

Co-supervisor of Thesis:

2010-2011 *Creazione di un database per la definizione dei modelli di danno da rischio alluvionale*, G. Ottomano - Master of Science in Civil Engineering

2011-2012 *Valutazione critica dei modelli di previsione delle piene ai fini dell'allertamento della protezione civile: il caso della Regione Umbria*, A. Libera - Master of Science in Civil Engineering

La valutazione del rischio secondo la direttiva alluvioni: una proposta metodologica applicabile al contesto italiano, L. Legnani - Master of Science in Civil Engineering for Risk Mitigation

2013-2014 *Flood damage assessment with the help of HEC-FIA model*, R. Hasanzadeh Nafari - Master of Science in Civil Engineering for Risk Mitigation

2014-2015 *Post-disaster loss accounting vs disaster forensic: insights from the November 2013 flood in the Umbria region*, M.C. Rodriguez Parra - Master of Science in Civil Engineering for Risk Mitigation

2015-2016 *Scenario di rischio alluvionale per la città di Sondrio,* A. Bettiga - Master of Science in Civil Engineering for Risk Mitigation

2015-2016 *Effectiveness of structural mitigation measures to reduce residential buildings vulnerability to floods,* V. Bezzam - Master of Science in Civil Engineering for Risk Mitigation

2019-2020 Un nuovo metodo per la stima del danno alluvionale, T. Lazzarin - Master of Science in Civil Engineering, Università degli studi di Padova

2019-2020 Quadro sinottico del danno di alluvione in Italia: proposta di un modello per il rapid mapping. A. Pogliani – Master of Science in Environmental and land planning Engineering

from 2009 onward

Invited lecturer at specializing masters:

2006-2007 Specialization certificate for the assessment and management of geological and climate related risk – University of Geneva

2007-2008 Specialization certificate for the assessment and management of geological and climate related risk – University of Geneva

2009-2010 Master universitario di II° livello in Progettazione per lo Sviluppo Sostenibile in Aree Montane e Politiche per la Montagna dell'Unione Europea – Politecnico di Milano e Regione Lombardia

2014-2015 Master universitario di II° livello in Territorio e Architettura Sostenibili – Politecnico di Milano

2008-2009:

Student supervisor at Alta Scuola Politecnica (Milan, Italy) with the supervision of Prof. Fabio Inzoli (Department of Energy, Politecnico di Milano)
Title of the project: Preliminary risk analysis and emergency planning of an illegal settlement in Guayaquil

RESEARCH PROJECTS and ACTIVITY

Principal Investigator of the following Italian projects:

- DROP: DROPco-designed Decision support system and solutions for flood Resilience with and fOrPeople (funded by Fondazione Cariplo) – ongoing
- HYRMA: Hydrogeological Risk assessment through Collaborative Mapping (PRIN project)

- Flood-IMPAT+: an Integrated Meso & micro scale Procedure to Assess Territorial flood risk (funded by Fondazione Cariplo)(ref. to publications J17, J18, J19, J25, P15, P16, P17, P18, P19)

- Modelli per la previsione e gestione del danno alle reti in caso di alluvione (funded by Fondazione AMGA, ref. to publication P21)

- Verso una valutazione esaustiva del danno a supporto della mitigazione del rischio alluvioni (PhD scholarship funded by Banca D'Italia, ref. to publication J34)

Collaboration in the following **EU research projects:**

- Preparação para as mudanças climáticas e igualdade na província de Cabo Delgado (EU – Europeaid) (ref. to publication: J39)

- LODE project (PREVENTION AND PREPAREDNESS PROJECTS IN CIVIL PROTECTION AND MARINE POLLUTION): Loss Data Enhancement for Disaster Risk Reduction and Climate Change Adaptation Management

- IDEA project (PREVENTION AND PREPAREDNESS PROJECTS IN CIVIL PROTECTION AND MARINE POLLUTION): Improving Damage assessments to Enhance cost-benefit Analyses (ref. to publications J10, P12, P13, P14, b7)

- KNOW-4-DRR project (SEVENTH FRAMEWORK PROGRAMME): Enabling knowledge for disaster risk reduction in integration to climate change adaptation

- ENSURE project (SEVENTH FRAMEWORK PROGRAMME): Enhancing resilience of communities and territories facing natural and na-tech hazards (ref. to publication J4)

- MIARIA project (INTERREG Project Italy-Switzerland 2007-2013): Monitoraggio Idrogeologico Adattativo a Supporto del Piano di Rischio Integrato Alpino (ref. to publication b4)

- SCENARIO project (SIXTH FRAMEWORK PROGRAMME): Support on Common European Strategy for sustainable natural and induced technological hazards mitigation (ref. to publications b2, b3)

- ARMONIA project (SIXTH FRAMEWORK PROGRAMME): Applied Multi Risk Mapping of Natural Hazards for impact assessment.

Collaboration in the following **Italian projects:**

- SAFER: Sustainable Approaches For the Effective management of natural Risks, funded by Fondazione Cariplo – ongoing

- RETURN - multi-Risk sciEnce for resilienT commUnities undeR a changiNg climate, funded by PNRR (WP leader) (ref. to publications: J37, J42, J43, J46, J49, P28)

- AMAZING - Atlas Mountains, Aurès Zone. INterconnecting local sciences and Global challenges, Polisocial Award 2022 , Politecnico di Milano (ref. to publication P29)

- Poli-RISPOSTA - stRumentI per la protezione civile a Supporto delle POpolazioni nel poST Alluvione, Polisocial Award 2012-2013, Politecnico di Milano (ref. to publications J6, J8, P8, b6)

- Sistemi di allerta precoce: aspetti tecnici, urbanistici e di comunicazione (PRIN project 2006)

- PROMETEO – RI-IMAGE (Politecnico di Milano project): strategic research on integration of methods and approaches of hydro-geological risk analyses in order to improve emergency management

Collaboration with Italian **authorities**:

- Po River Basin District (2022-2025)
  Project Manager of the research team of Politecnico di Milano of the project: Valutazione dei danni da eventi geo-idrologici (ref. to publication P24)

- Interregional Agency for the Po River (2024)
  Project Manager of the research team of Politecnico di Milano of the project: Valutazione del danno alluvionale a supporto della gestione delle golene chiuse sul fiume Po ai fini della laminazione della portata di piena – step 2

- Interregional Agency for the Po River (2020-2022)
  Project Manager of the research team of Politecnico di Milano of the project: Valutazione del danno alluvionale a supporto della gestione delle golene chiuse sul fiume Po ai fini della laminazione della portata di piena – step 1

- Po River Basin District (2020-2022)
  Project Manager of the research team of Politecnico di Milano of the project: Metodologie e applicazioni per l'aggiornamento delle mappe di danno alluvionale relativamente alla revisione del PGRA (ref. to publications: J30, J36, J38, P22, P23)

- Po River Basin District (ongoing)
  Member of the research team of Politecnico di Milano on the theme: Floods Directive implementation – flood risk assessment and management (ref. to publications J9, P6, P7, P9, P10, P11)

- Umbria Region – Civil protection (2011-2016)
  Project manager of the activities of Politecnico di Milano as Expertise Centre on the theme: forecasting and mitigation of hydrogeological risks (ref. to publications J6, J8, J10, b5, b6, b7, P4, P5)

- Valle d'Aosta Region (2014-2016)
  Member of the research team of Politecnico di Milano on the theme: Floods Directive implementation – flood risk assessment and management (ref. to publications P9, P10, P11)

- Province of Varese (2008-2011)
  Member of the research team of Politecnico di Milano for the development of the Provincial Emergency Plan for Drought

PUBLICATIONS

Articles in Journals

J1) Tabor G.R., **Molinari D.**, Juleff G., Computational simulation of air flows through a Sri Lanka wind-driven furnace, *Journal of Archaeological Science*, 32(5), 753–766, 2005

J2) **Molinari D**. Analisi di rischio e incertezza: l'uso dei metodi Monte Carlo per i rischi naturali. *Ingegneria Sismica*, 2, 36-44, 2007

J3) **Molinari D.**, Handmer J., A behavioural model for quantifying flood warning effectiveness, *Journal of flood risk management*, 4(1), 23–32, 2011

J4) Menoni S., **Molinari D.**, Parker D., Ballio F., Tapsell S., Assessing multifaceted vulnerability and resilience in order to design risk-mitigation strategies, *Natural Hazards*, 64(3), 2057-2082, 2012

J5) **Molinari D.**, Ballio F., Menoni S., Modelling the benefits of flood emergency management measures in reducing damages: a case study on Sondrio, Italy, *Natural Hazards and Earth Systems Science*, 13, 1913-1927, 2013

J6) **Molinari D.,** Menoni S. , Aronica G.T., Ballio F., Berni N., Pandolfo C., Stelluti M., Minucci G., Ex-post damage assessment: an Italian experience, *Natural Hazards and Earth Systems Science,14, 901-916, 2014*

J7) **Molinari D.**, Ballio F., Handmer J., Menoni S., On the modeling of significance for flood damage assessment, *International Journal of Disaster Risk Reduction*, 10, part A, 381-391, 2014

J8) Ballio F., **Molinari D.**, Minucci G., Mazuran M., Arias Munoz C., Menoni S., Atun F., Ardagna D., Berni N., Pandolfo C., The RISPOSTA procedure for the collection, storage and analysis of high quality, consistent and reliable damage data in the aftermath of floods, *Journal of Flood Risk Management*, 11,S604–S615 (2018), on line first, 2015

J9) **Molinari D**., Minucci G., Mendoza M.T., Simonelli T. Implementing the European "Floods Directive": the Case of the Po River Basin, *Water Resources Management*, 30(5), 1739-1756, 2016

J10) Menoni S., **Molinari D.**, Ballio F., Minucci G., Atun F., Berni N., Pandolfo C. Flood damage: a model for consistent, complete and multi-purpose scenarios, *Nat. Hazards Earth Syst. Sci.* 16, 2783-2797, 2016

J11) Dottori F., Figueiredo R., Martina M.L.V., **Molinari D.,** Scorzini A. (N.B. authors in alphabetical order) INSYDE: a synthetic, probabilistic flood damage model based on explicit cost analysis, *Nat. Hazards Earth Syst. Sci.,* 16, 2577-2591, doi:10.5194/nhess-16-2577-2016, 2016.

J12) Kreibich H., Di Baldassarre G., Vorogushyn S., Aerts J.C.J.H., Apel H, Aronica G.T., Arnbjerg-Nielsen K, Bouwer L.M., Bubeck P., Caloiero T., Chinh D.T., Cortès M., Gain A.K., Giampá V, Kuhlicke C., Kundzewicz Z.W., Llasat M.C., Mård J., Matczak P., Mazzoleni M., **Molinari D.,** Dung N.V., Petrucci O., Schröter K., Slager K., Thieken A.H., Ward P.J., Merz B. Adaptation to flood risk – results of international paired flood event studies, *Earth's Future,* doi: 10.1002/2017EF000606, 2017

J13) **Molinari D.**, Scorzini A., On the influence of input data quality to flood damage estimation: The Performance of the INSYDE Model, *Water*, 9(9), 688; doi:10.3390/w9090688, 2017

J14) Di Baldassarre G., Kreibich H., Vorogushyn S., Aerts J., Arnbjerg-Nielsen K., Barendrecht M., Bates P., Borga M., Botzen W., Bubeck P., De Marchi B., Llasat C., Mazzoleni M., **Molinari D.**, Mondino E., Mård J., Petrucci O., Scolobig A., Viglione A., Ward P.J., Hess Opinions: An interdisciplinary research agenda to explore the unintended consequences of structural

flood protection, Hydrol. Earth Syst. Sci., 22, 5629–5637, https://doi.org/10.5194/hess-22-5629-2018, 2018

J15) **Molinari D**., De Bruijn K., Castillo-Rodríguez J.T., Aronica G.T., Bouwer L.M., Validation of flood risk models: Current practice and possible improvements, International Journal of Disaster Risk Reduction, 33, 441-44, https://doi.org/10.1016/j.ijdrr.2018.10.022, 2019, (on line first 2018)

J16) Scorzini A.R., Radice A., **Molinari D.**, A New Tool to Estimate Inundation Depths by Spatial Interpolation (RAPIDE): Design, Application and Impact on Quantitative Assessment of Flood Damage, Water 10, doi:10.3390/w10121805, 2018

J17) **Molinari D**., Scorzini A. R., Gallazzi, A., Ballio, F., AGRIDE-c, a conceptual model for the estimation of flood damage to crops: development and implementation, Nat. Hazards Earth Syst. Sci., 19, 2565–2582, https://doi.org/10.5194/nhess-19-2565-2019, 2019

J18) Gaviglio A., Filippetti R., **Molinari D.**, Marescotti M.E., Demartini E., Evaluating the flood damage on dairy farms: a methodological proposal, Aestimum, 75, 25-47, 2019

J19) Minucci G., **Molinari D**., Gemini G., Pezzoli S., Enhancing flood risk maps by a participatory and collaborative design process, International Journal of Disaster Risk Reduction 50, https://doi.org/10.1016/j.ijdrr.2020.101747, 2020

J20) Sairam N., Schröter K., Carisi F., Wagenaar D., Domeneghetti A., **Molinari D.**, Brill F., Priest S., Viavattene C., Merz B., Kreibich H., Bayesian Data-Driven Approach Enhances Synthetic Flood Loss Models, Environmental Modelling and Software 132, https://doi.org/10.1016/j.envsoft.2020.104798, 2020

J21) Galliani M., **Molinari D**., Ballio F., Brief communication: simple-INSYDE, development of a new tool for flood damage evaluation from an existing synthetic model, Nat. Hazards Earth Syst. Sci., 20, 2937–2941, https://doi.org/10.5194/nhess-20-2937-2020, 2020

J22) **Molinari D**., Scorzini A. R., Arrighi C., Carisi F., Castelli F., Domeneghetti A., Gallazzi A., Galliani M., Grelot F., Kellermann P., Kreibich H., Mohor G. S., Mosimann M., Natho S., Richert C., Schroeter K., Thieken A. H., Zischg A. P., Ballio F., Are flood damage models converging to reality? Lessons learnt from a blind test, Nat. Hazards Earth Syst. Sci., 20, 2997–3017, https://doi.org/10.5194/nhess-20-2997-2020, 2020

J23) Radice A., Ballio F., Longoni L., Menoni S., **Molinari D.**, Papini M., Discussion of "Recommendations for teaching a successful design-based course: hydraulic structure design", by B. P. Tullis and S. L. Barfuss, Journal of Hydraulic Engineering, 147 (3), https://doi.org/10.1061/(ASCE)HY.1943-7900.0001863, 2021

J24) Pogliani A., Bertulessi M., Bignami D.F., Boschini I., Del Vecchio M., Menduni G., **Molinari D**., Zambrini F., A Zero-Order Flood Damage Model for Regional-Scale Quick Assessments, Water, 13(9), 1292, https://doi.org/10.3390/w13091292, 2021

J25) **Molinari D.**, Dazzi S., Gattai E., Minucci G., Pesaro G., Radice A., Vacondio R., Cost–benefit analysis of food mitigation measures: a case study employing high-performance hydraulic and damage modelling, Natural Hazards, on line first: https://doi.org/10.1007/s11069-021-04814-6, 2021

J26) Manselli L., **Molinari D**., Pogliani A., Zambrini F., Menduni G., Improvements and Operational Application of a Zero-Order Quick Assessment Model for Flood Damage: A Case Study in Italy. Water,14, 373, https://doi.org/10.3390/w14030373, 2022

J27) Lazzarin T., Viero D.P., **Molinari D.**, Ballio F., Defina A., Flood damage functions based on a single physics- and data-based impact parameter that jointly accounts for water depth and velocity. Journal of Hydrology, 607, https://doi.org/10.1016/j.jhydrol.2022.127485, 2022

J28) Gain A.K., Bühler Y., Haegeli P., **Molinari D.**, Parise M., Peres D. J., Pinto J.G., Schröter K., Trigo R.M., Carmen Llasat M., Kreibich H.: Brief Communication: Key papers of 20 years in Natural Hazards and Earth System Sciences, Nat. Hazards Earth Syst. Sci., 22, 985–993, https://doi.org/10.5194/nhess-22-985-2022, 2022.

J29) Scorzini A.R., Dewals B., Rodriguez Castro D., Archambeau P., **Molinari D**.: INSYDE-BE: Adaptation of the INSYDE model to the Walloon Region (Belgium), Nat. Hazards Earth Syst. Sci., 22, 1743–1761, https://doi.org/10.5194/nhess-22-1743-2022, 2022.

J30) Simonelli T., Zoppi L., **Molinari D**., Ballio, F.: Invited perspectives: When research meets practice: challenges, opportunities, and suggestions from the implementation of the Floods Directive in the largest Italian river basin, Nat. Hazards Earth Syst. Sci., 22, 1819–1823, https://doi.org/10.5194/nhess-22-1819-2022, 2022.

J31) Lazzarin T., Viero D.P., **Molinari D**., Ballio F., Defina A.: A new framework for flood damage assessment considering the within-event time evolution of hazard, exposure, and vulnerability, Journal of Hydrology, 615 Part A, https://doi.org/10.1016/j.jhydrol.2022.128687, 2022

J32) Haun S., **Molinari D.,** Muste M., Dewals B.: The role of hydraulic engineering in support of flood mitigation and resilience, IAHR White Paper Series,1, 2023

J33) **Molinari D**., Dewals B., Haun S, El Kadi Abderrezzak K., Vitthal Kale R.: Integrated flood risk management as a tool to achieve UN Sustainable Development Goals, Hydrolink 1, 2023

J34) Asaridis, P., **Molinari, D.**: A conceptual model for the estimation of flood damage to power grids, Adv. Geosci., 61, 1–21, https://doi.org/10.5194/adgeo-61-1-2023, 2023.

J35) Bonomelli R., Farina G., Pilotti M., **Molinari D.,** Ballio F., Historical comparison of the damage caused by the propagation of a dam break wave in a pre-alpine valley, Journal of Hydrology: Regional Studies, 48, https://doi.org/10.1016/j.ejrh.2023.101467, 2023

J36) Yazdani M., Gencarelli C.N., Salvati P., **Molinari D.**, An empirical flood fatality model for Italy using random forest algorithm, International Journal of Disaster Risk Reduction, 98,104110, https://doi.org/10.1016/j.ijdrr.2023.104110, 2023

J37) Di Bacco M., **Molinari D.**, Scorzini A.R., The value of multi-source data for improved flood damage modelling with explicit input data uncertainty treatment: INSYDE 2.0, Natural Hazards and Earth System Sciences,24(5),1681 – 1696, https://doi.org/10.5194/nhess-24-1681-2024, 2024

J38) Arosio M., Arrighi C., Bonomelli R., Domeneghetti A., Farina G., **Molinari D.**, Monteleone B., Scorzini A.R., Martina M., Unveiling the assessment process behind an integrated flood risk management plan, International Journal of Disaster Risk Reduction, 112, https://doi.org/ 10.1016/j.ijdrr.2024.104755, 2024

J39) Rrokaj, S., **Molinari, D.**, Paz Idarraga, C.D., Rotaru, A.M., Ergün, Z., Anza, A., Porzio, M., Costa, A., Radice, A., Flood risk assessment and participative process in the data-scarce Metuge district of Mozambique: An exportable approach, International Journal of Disaster Risk Reduction, 116, https://doi.org/10.1016/j.ijdrr.2024.105163, 2025

J40) Rodríguez Castro, D., Cools, M., Roucour, S., Archambeau, P., **Molinari, D**., Scorzini A.R., Dessers, C., Erpicum, S., Pirotton, M., Teller, J. Dewals,B. Can macro- or meso-scale coping capacity variables improve the classification of building flood losses?. Nat Hazards, https://doi.org/10.1007/s11069-025-07123-4, 2025

J41) Asaridis, P., **Molinari**, **D**., Di Maio, F., Ballio, F., Zio, E., A probabilistic modeling and simulation framework for power grid flood risk assessment, International Journal of Disaster Risk Reduction, 120, https://doi.org/10.1016/j.ijdrr.2025.105353, 2025

J42) Acharya, P., Di Bacco, M., **Molinari, D.**, Scorzini, A. R.: INSYDE-content: a synthetic, multi-variable flood damage model for household contents, Nat. Hazards Earth Syst. Sci., 25, 4317–4330, https://doi.org/10.5194/nhess-25-4317-2025, 2025.

J43) Rrokaj, S., Arrighi, C., Ballocci, M., Bertoli, G., da Porto, F., De Lucia, C., Di Bacco, M., Di Fluri, P., Domeneghetti, A., Donà, M., Gallazzi, A., Gennaro, A., Hammouti, M., Lelli, G., Mozzon, S., Petruccelli, N., Saler, E., Scorzini, A. R., Sterlacchini, S., Treglia, G., Voltolina, D., Zazzeri, M., **Molinari, D.**: Survey data of damaged residential buildings and business premises from the 2022 record-breaking flood in the Marche region, Italy, Earth Syst. Sci. Data, 17, 6487–6496, https://doi.org/10.5194/essd-17-6487-2025, 2025.

J44) Bubeck, P., Rrokaj, S., **Molinari D**.: Screening for mental distress following the 2022 Marche Floods in Italy: A comparative study using the Kessler Distress Scale in directly affected individuals and a control group, Journal of flood risk management, 2025, https://doi.org/10.1111/jfr3.70167

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Books

B1) **Molinari D**., Ballio F., Menoni S., *Flood Early Warning Systems: knowledge and tools for their critical assessment*, WIT Press, 2013

Contributions in books

b1) **Molinari D**., Cozzi S. Il recepimento in Lombardia delle direttive comunitarie sui rischi, In: M.C. Treu (ed) *Città, Salute, Sicurezza: Strumenti di governo e casi studio*, Maggioli editore, 2009

b2) Delmonaco G., Atun F., Ceudech A., Deemening H., De Roo A., Lumbroso D., Galderisi A., Kallache M., Kropp J.P., Kundak S., **Molinari D**., Tweed F., Wade S., Walker G., Dandoulaki M., Barredo J. Europe at risk (following EU funded research on hazards and risks), In: Menoni S., Margottini C. (eds.): *Inside Risk: a strategy for sustainable risk mitigation*, Springer, 2011

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b4) **Molinari D.**, Ballio F., Menoni S., Ottomano G. Le curve di danno quale strumento a supporto della Direttiva Alluvioni: criticità del contesto Italiano, In: Bignami D., Alippi C. (eds) *MIARIA (Monitoraggio Idrogeologico Adattativo a supporto del Piano di Rischio Integrato ALpino) - Tecnologia e conoscenza al servizio della sicurezza*. vol. II, Missaglia - LC: Bellavite Editore, 2012

b5) **Molinari D**., Ballio F., Berni N., Pandolfo C. Towards more effective Early Warning Systems: the Italian Experience. Input Paper prepared for: United Nations Office for Disaster Risk Reduction – UNISDR *Making Development Sustainable: The Future of Disaster Risk Management. Global Assessment Report on Disaster Risk Reduction*, Geneva, Switzerland, 2015 , ISBN 978-92-1-132042-8,
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b6) Berni N., **Molinari D**., Ballio F., Minucci G., Arias C. Best practice of data collection at the local scale: the RISPOSTA procedure, In: Molinari D., Ballio F. Menoni S. (eds), *Flood Damage Survey and Assessment: New Insights from Research and Practice*, AGU-Wiley, 2017

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b8) **Molinari D.**, Menoni S., Ballio F. Conclusions, In: Molinari D., Ballio F. Menoni S. (eds), *Flood Damage Survey and Assessment: New Insights from Research and Practice*, AGU-Wiley, 2017

b9) **Molinari, D.**, Tsionis, G., Athanasopoulou, A., Bournas, D., Ciurean, R., De Gregorio, D., Leone, M., Rossetto, T., Sousa, M.L., Zuccaro, G., 'Residential sector', in: Casajus Valles, A., Marin Ferrer, M., Poljanšek, K., Clark, I. (eds.), Science for Disaster Risk Management 2020: acting today, protecting tomorrow, EUR 30183 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-18182-8, doi:10.2760/571085, JRC114026.

b10) Toreti, A., Bassu, S., Perez Blanco, D., Capitanio, F., Ramos Ribeiro, R.R., **Molinari, D.**, Webber, H., 'Agriculture', in: Casajus Valles, A., Marin Ferrer, M., Poljanšek, K., Clark, I. (eds.), Science for Disaster Risk Management 2020: acting today, protecting tomorrow, EUR 30183 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-18182-8, doi:10.2760/571085, JRC114026.

b11) Rrokaj, S., Kurt, A., Adhikari, R.S. Kethiri, M.A., Porta, G.M., Tedeschi, C., **Molinari D**., "A Tool for Assessing and Surveying Building Vulnerability in Algeria", in: Augelli, F., Bortolotto, S. (eds), Cultural Heritage Preservation for Vulnerable Territories - The Aurès Region in Algeria, Springer, 2025, ISBN 978-3-031-97720-6, doi: 10.1007/978-3-031-97721-3

Conference papers

P1) **Molinari D**., Ballio F., Menoni S., Flood forecast verification in EWS, *Atti del XXXII Convegno nazionale di idraulica e costruzioni idrauliche*, 14-17 September, 2010, Palermo, Italy

P2) **Molinari D**., Ballio F., Menoni S., Flood forecast verification to support emergency management, *Proceeding of the 34th IAHR World Congress*, 26 June-1 July 2011, Brisbane, Australia

P3) **Molinari D**., Ballio F., Menoni S., Flood emergency management: the value of potential and actual damage estimation. In: Proverbs D., Mambretti S., Brebbia C., De Wrachien D. (eds) *Flood Recovery Innovation and Response III*, WIT Press, 2012

P4) **Molinari D.,** Aronica G.T., Ballio F., Berni N., Pandolfo C., Le curve di danno quale strumento a supporto della direttiva alluvioni: criticita' dei dati italiani, *Atti del XXXIII Convegno nazionale di idraulica e costruzioni idrauliche*, 10-15 September, 2012 , Brescia, Italy

P5) **Molinari D**., Ballio F., Berni N., Pandolfo C., Implementing the Floods Directive: the case of the Umbria Region, In: Klijn F., Schweckendiek T. (eds) *Comprehensive Flood Risk Management*, Taylor & Francis Group, London, 2013

P6) **Molinari D.,** Ballio F., Menoni S., Legnani L., Implementing the Floods Directive: a procedure for flood risk analysis and mapping, *Proceedings of 35th IAHR World Congress*, 2013 Tsinghua University Press, Beijing, China

P7) Legnani L., **Molinari D.,** Ballio F., Menoni S., La procedura Flood-IMPAT per la valutazione e mappatura del rischio alluvionale, *Atti della XIII giornata mondiale dell'acqua: calamità idrogeologiche - aspetti economici*, 22 March 2013, Accademia Nazionale dei Lincei, Roma, Italy

P8) **Molinari D.,** Mazuran M., Arias C., Minucci G., Atun F., Ardagna D., Implementing tools to meet the Floods Directive requirements: a "procedure" to collect, store and manage damage data in the aftermath of flood events, In: Proverbs D., Brebbia C. A. (eds) *Flood Recovery Innovation and Response IV*, WIT Press, 2014

P9) Ballio F., **Molinari D.,** Minucci G., Mendoza M.T., Atun F., Menoni S., Simonelli T., On the Flood-IMPAT procedure for flood risk analysis and mapping, *Proceedings of River Flow 2016,* St. Louis, USA, 12-14 July 2016- ISBN:978-1-138-02913-2

P10) Minucci G., Mendoza M.T., Atun F., Ballio F., **Molinari D.**, Simonelli T. Analysis of post-event damage data for supporting risk-modelling process, *Proceedings of River Flow 2016,* St. Louis, USA, 12-14 July 2016- ISBN:978-1-138-02913-2

P11) Minucci G., Mendoza M.T., **Molinari D.**, Atun F., Ballio F., Menoni S, Applying the Flood-IMPAT procedure for assessing and mapping flood risk in the Valle D'Aosta region, *Atti del XXXV Convegno nazionale di idraulica e costruzioni idrauliche*, 14-16 September, 2016 , Bologna, Italy

P12) **Molinari D**., Prades R., Garcia-Fernandez M., Dolan M., Menoni S., Marcellini D., Flood damage data analysis: towards an improvement of data quality and usability, *Proceedings of FLOODrisk 2016 - 3rd European Conference on Flood Risk Management, 18-20 October 2016, Lyon, France, ISBN: 978-2-7598-9005-7*

P13) Minucci G., Garcia-Fernandez M., Menoni S., **Molinari D.**, Jimenez M.J., Mendoza M.T., Ballio F., Berni N., Cedazo Tabernero C., Mata Francès R., Comparing post-event and pre-event damage assessment: Information gaps and lessons learnt, *Proceedings of FLOODrisk 2016 - 3rd European Conference on Flood Risk Management, 18-20 October 2016, Lyon, France, ISBN: 978-2-7598-9005-7*

P14) Dolan M., Walliman N., **Molinari D.**, Menoni S. , Ogden R , Amouzad S., Ballio F., Post-flood damage data: requirements for disaster forensic investigation, *Proceedings of FLOODrisk 2016 - 3rd European Conference on Flood Risk Management, 18-20 October 2016, Lyon, France, ISBN: 978-2-7598-9005-7*

P15) Radice A., Bettiga A., Figueiredo R. and **Molinari D.**, On urban inundation and damage modelling, European Water, 57, 11-17, 2017, *Proceedings of the 10th World Congress of EWRA 'Panta Rhei', 5-9 July 2017, Athens, Greece*

P16) Galliani M., A.R. Scorzini, **Molinari D.**, Minucci G., On flood damage models validation and uncertainty assessment: the case of the 2002 flood in Lodi (Northern Italy), *Proceeding of the 5Th IAHR Europe Congress, Trento, 12-14 June, 2018*

P17) **Molinari D.,** Radice A., Agosti A., Crippa J., Scorzini A. R., Dazzi S., Bertuzzi F., Vacondio R. Modellazione dell'evento alluvionale che ha interessato la città di Lodi nel novembre 2002*., Atti del the XXXVI Convegno di Idraulica e Costruzioni Idrauliche, 12-14 September, 2018, Ancona, Italy*

P18) **Molinari D.**, Minucci G., Scorzini A.R., Galliani M., Ballio F., La diffusione della conoscenza sul rischio alluvionale nel progetto Flood-IMPAT+, *Atti del XXXVI Convegno di Idraulica e Costruzioni Idrauliche, 12-14 September, 2018, Ancona, Italy*

P19) Minucci G., **Molinari D.,** Gemini G., Pezzoli S., Galliani M., Gallazzi A., Co-mapping lab: un'esperienza di costruzione collaborativa delle mappe di rischio alluvionale. Atti della XXII Conferenza Nazionale SIU - Società Italiana degli Urbanisti, 5-7 June 2019, Bari-Matera, Italy **(awarded as best paper)**

P20) Bombelli I., **Molinari D**., Asaridis P., Ballio F., The "Flood Damage Model" repository, *Proceeding of the 4th European Conference on Flood Risk Management, 22-24 June 2021 - Virtual Conference*

P21) Gallazzi A., **Molinari D**., Ballio F., Scorzini A.R., Development of a flood damage model for urban drainage networks, *Proceeding of the 4th European Conference on Flood Risk Management, 22-24 June 2021 - Virtual Conference*

P22) Petruccelli, N., Mantecchini, L., Gallazzi, A., **Molinari, D.**, Hammouti, M., Zazzeri, M., Sterlacchini, S., Ballio, F., Brath, A., Domeneghetti, A., Qualitative flood risk assessment for road and railway infrastructures: The experience of the MOVIDA project, *Proceedings of the International Association of Hydrological Sciences, 385, 407 – 413, 18 April 2024 IAHS Scientific Assembly 2022 - Hydrological Sciences in the Anthropocene, Montpellier 29 May-3 June 2022, France*

P23) Ballio F., **Molinari D** and the MOVIDA working group. The MOVIDA Project to Support the Update of Flood Risk Maps in the Po River District: methodology for flood damage assessment, *Proceedings of the 39th IAHR World Congress, 19-24 June 2022 Granada, Spain*

P24) Paz Idarraga C.D., Scorzini A.R., **Molinari D.** Monthly flood frequency regionalization for comprehensive flood damage assessment to crops, *Atti del XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Parma, 15-18 settembre 2024, Italy*

P25) Lazzarin, T., Viero, D.P., **Molinari, D.,** Ballio, F. Defina, A., A flood damage model accounting for time-evolving hazard, exposure, and vul-nerability at the event-scale, *Atti del XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Parma, 15-18 settembre 2024, Italy*

P26) Gallazzi, A., **Molinari, D.** Credali, M., Muratori, S., Ballio, F. Tolone I., A multi-criteria analysis procedure for the evaluation and classification of flood risk mitigation measures, *Atti del XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Parma, 15-18 settembre 2024, Italy*

P28) Rubino A. et al., Towards a multi-criteria analysis for evaluating the effectiveness of risk reduction strategies in multi-hazard risk contexts, *Atti del XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Parma, 15-18 settembre 2024, Italy*

P29) Rrokaj, S., Kurt, A. Kethiri M.A., Adhikari R.S., Tedeschi, C. Porta, G.M., **Molinari D.,** Integrated vulnerability of buildings in the wadi Abiod valley, Algeria, *Atti del XXXIX Convegno Nazionale di Idraulica e Costruzioni Idrauliche, Parma, 15-18 settembre 2024, Italy*

EDITORIAL ACTIVITY

Editor of the journal Natural Hazards and Earth System Sciences (2020 - 2023)

Editor of the journal Journal of Flood Risk Management (from January 2021)

Reviewer for:

- Natural Hazards, Springer
- Natural Hazards and Earth System Sciences, Copernicus
- International Journal of Safety and Security Engineering, WIT
- Sustainability, MDPI
- Water Resource Management, Springer
- Journal of Flood Risk Management, Wiley
- Science of the Total Environment, Elsevier
- Water Resources Research, Wiley
- Journal of Environmental Management, Elsevier
- SN Applied Science, Springer
- Geomatics, Natural Hazards and Risk, Taylor & Francis
- International Journal of Disaster Risk Reduction, Elsevier
- Sustainable Cities and Society, Elsevier
- Nature Communications, Springer

Co-Editor of the book "Flood damage survey and assessment: new insights from research and practice", AGU-Wiley, 2017

Guest Editor of the Special Issue "Natural hazard event analyses for risk reduction and adaptation", Natural Hazards and Earth System Sciences (2015)

Guest Editor of the Special Issue "Damage of natural hazards: assessment and mitigation", Natural Hazards and Earth System Sciences (2016)

Guest Editor of the Special Issue "Towards a digital ecosystem of virtual testbeds to support Disaster Risk Management and Climate Change Adaptation in complex multi-risk frameworks" International Journal of Disaster Risk Reduction (2025)

Member of the Scientific Committee of the 39th IAHR World Congress: From Snow to Sea, 19-24 June 2022, Granada, Spain

Member of the Scientific Committee of the 7th IAHR Europe Congress: Innovative Water Management in a Changing Climate, 7-9 September 2022, Athens, Greece

Member of the Scientific Committee of the 40th IAHR World Congress: Rivers – Connecting mountains and coasts, 21-25 August 2023, Vienna, Austria

Member of the Scientific Committee of the 41th IAHR World Congress: Innovative Water Engineering for Sustainable Development, 22-27 June 2025, Singapore

MEMBERSHIPS

From 2010 onward
Member of the European Geophysical Union

From 2014 onward
Member of Gruppo Italiano di Idraulica

From 2013 onward
Member of the International Association for Hydro-Environment Engineering and Research, from January 2018 elected member of the Flood Risk Management Technical Committee, from January 2020 vice chair of the of the Flood Risk Management Technical Committee, from June 2022 chair of the of the Flood Risk Management Technical Committee (ref. to publications J32, J33), from June 2025 **past-chair of the Flood Risk Management Technical Committee**

From 2014 onward
Member of the Panta Rhei Working Group "Changes in flood risk", research initiatives within the IAHS (International Association of Hydrological Sciences) scientific decade 2013-2022 (ref. to publications J12, J14)

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