



International Workshop

Novel concepts for the mitigation of flood and drought risk

Science progress and engineering practice

Aula Grande – Alma Mater Studiorum Università di Bologna

Piazza San Giovanni in Monte 2, Bologna

<https://goo.gl/maps/djnvocufVrHoCM3BA>

A better understanding of **environmental, natural and anthropogenic risks**, their interrelation with the effect of **climate change** effects, the development of up-to-date research **methodology** and the **knowledge transfer** to disaster risk managers is timely and necessary.

The workshop is framed within the research activities of the extended partnership “RETURN - Multi-Risk Science for Resilient Communities Under a Changing Climate”, financed by the National Recovery and Resilience Plan.

The aim is to bring together international hydrologists to discuss how novel scientific findings and methods can assist decision making of environmental engineers in water resources management, land management and hazard planning, addressing the challenges of the modern society. Topics may include floods and droughts under environmental change and linkages to societal processes system. The expected workshop output is the publication of a community commentary on a scientific journal.

WORKSHOP ORGANIZATION

10:00-10:15 Welcome speeches

10:15-11:15 **Floods** - Extended and pop-up presentations with following discussion

11:15-12:30 **Droughts** - Extended and pop-up presentations with following discussion

12:30-14:00 Lunch break – buffet at the venue

14:00-15:00 **Multi-hazard and multi-risk assessment** - Extended and pop-up presentations with following discussion

15:00-16:00 **Hydrologic and hydraulic processes** - Extended and pop-up presentations with following discussion

16:00-17:00 Discussion and final remarks

The list of presentations is available in the following page

International Workshop “Novel concepts for the mitigation of flood and drought risk - Science progress and engineering practice”

10:15-11:15 Floods

Orlandini Stefano: Flood mitigation in Emilia Romagna in light of the EU Nature Restoration Law (12-min)

Di Bacco Mario: Toward modeling and quantitative approaches in assessing and fostering flood risk resilience (12-min)

Valent Peter: Copula-based modelling of flood peak-volume-duration relationship for reservoir safety evaluation and flood risk assessment in Slovakia (2-min)

Bertola Miriam: Probabilistic regional envelope curves of flood flows in Europe (2-min)

Castellarin Attilio: Synthesis of regional flood frequency models in the Po River District (2-min)

Viglione Alberto: Non-stationary flood frequency analysis: a pragmatic approach applied to the Po River district (2-min)

Di Bacco Mario: Enhancing Flood Damage Modeling with Ultra-Detailed Survey Data and Explicit Uncertainty Treatment: INSYDE 2.0 (2-min)

Wong Jefferson: Cascading and assessing the climate change impact on flood risk through hydrological-hydraulic modelling in the Alzette River, Luxembourg (2-min)

Schroeter Kai: Expanding the use of new data for flood risk modelling (2-min)

Devitt Laura: Global sensitivity of inundation extent and population exposure to flood magnitude (2-min)

11:15-12:30 Droughts

Cotti Davide: Using conceptual models to understand and communicate the complex nature of drought risks (12-min)

Bonaccorso Brunella & Cancelliere Antonino: Recent advancements and challenges in operational drought risk management systems (12-min)

Polo Maria José: Snow droughts in the Mediterranean region: impacts on flood and scarcity risks (12-min)

Massari Christian: Which are the mechanisms by which a basin intensifies or attenuates meteorological droughts? (2-min)

Piemontese Luigi: Innovative approaches towards drought impact assessment and mitigation strategies (2-min)

Terzi Stefano: Establishing the Italian Alpine Drought Impact Inventory through an automated text analysis of newspaper articles (2-min)

Caruso Maria Francesca: Extreme meteorological droughts from paleo-climatic reconstructions analyzed through non-asymptotic extreme-value distributions (2-min)

Ho Sarah: Flood Reservoirs as Small Reservoirs in Southern Germany: Potential Concepts for Drought Protection (2-min)

Villani Lorenzo: Integrating risk-related approaches towards greater policy impact (2-min)

14:00-15:00 Multi-hazard and multi-risk assessment

Kreibich Heidi: The challenge of unprecedented floods and droughts in risk management (12-min)

Claps Pierluigi: Coherence vs. Novelty: which directions towards rainstorm and flood hazard assessment for the Infrastructures in Italy? Insights from the RETURN project (12-min)

Papacharalampous Georgia: Machine learning concepts and methods for probabilistic hydrological post-processing (2-min)

Faqiri Rafi Ahmed: Innovative Approaches to Flood and Drought Mitigation in Vulnerable Regions (2-min)

Cioffi Francesco: A holistic approach for flood and drought risk reduction: Pontina plane case study (2-min)

Fathollahzadeh Attar Nasrin: Extreme Windstorm Hazard In Northern Italy Using Non-asymptotic Statistics (2-min)

Balistrocchi Matteo: Levee requirements in regulated rivers (2-min)

Soni Rachit: Levees affected by mammal bio erosion (2-min)

Schroeter Kai: Improving collaboration in disaster risk management through interoperable data, models and communication (2-min)

Seibert Jan: Engaging the public in observing and predicting droughts (2-min)

Coletta Virginia Rosa: Participatory socio-hydrological modelling for supporting decision-makers in enhancing urban flood resilience through Blue-Green infrastructure (2-min)

15:00-16:00 Hydrologic and hydraulic processes

Dallan Eleonora: Estimation of extreme rainfall from convection-permitting climate model for the assessment of projected flood hazard (12-min)

Moretti Giovanni: Novel terrain analysis methods for thalweg and ridge network extraction (12-min)

Lompi Marco: Non-stationary frequency analysis of extreme precipitation over Italy using projections from a Convection Permitting Model (2-min)

Caruso Maria Francesca: Extreme rainfall in the Veneto Region using a WebGis interface (2-min)

Mazzoglio Paola: Spatial influence of record-breaking rainfall events (2-min)

Gregoretto Carlo: The drainage of sediments in the upper part of mountain basins: the novelty of the deposition areas for mitigating the debris-flow risk (2-min)

Cappelli Alessandro: Assessment of the chance of woody debris transport along rivers: Proposal of a fast screening methodology for bridges' obstruction (2-min)

Mohammad Hiba: New Strategies from Ancient Methods: Crop Planning based on Benfratello's Model and Budyko's Curve (2-min)

Pizzileo Simone: Novel descriptions of the land surface in 2D flood inundation models (2-min)

Gasperoni Riccardo: Novel descriptions of riparian vegetation in 2D surface flow models (2-min)

The workshop is organized under the patronage of:



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UNIVERSITÀ DI BOLOGNA
DEPARTMENT OF CIVIL, CHEMICAL, ENVIRONMENTAL
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