

## **IRISH NATIONAL HYDROLOGY CONFERENCE 2020**

**Tuesday 17th & Wednesday 18th November 2020**  
**Free Online Event**

### **INTRODUCTION**

The joint National Committees of the International Hydrological Programme and the International Commission on Irrigation and Drainage have the pleasure of welcoming you to the 21<sup>st</sup> annual Irish National Hydrology Conference being held on Tuesday 17<sup>th</sup> and Wednesday 18<sup>th</sup> November 2020. The conference provides a unique forum for attendees to share policy developments, research results, and practical solutions to engineering hydrology issues.

### **MAIN TOPICS**

In hydrology, practitioners apply scientific knowledge and mathematical principles to solve practical problems relating to water, floods and droughts, erosion and sediment transport. The application of hydrological techniques to planning and design of water related projects has always been a primary concern to hydrologists. In view of the increasing complexity of water related projects, it is imperative to have a sound grasp of the classical as well as the most modern analysis techniques of scientific and engineering hydrology and skill and experience in their application. The event covers range of topics from groundwater, water quality, coastal flooding, to impacts of droughts.

### **ORGANISERS**

#### **International Hydrological Programme (IHP)**

The UNESCO international scientific co-operative programme in hydrology and water resources, the IHP, was established to act as a catalyst to promote co-operation and research in the management of water resources, an issue which had been identified as a significant limiting factor for harmonious development in many regions and countries of the world.

#### **International Commission on Irrigation and Drainage (ICID)**

The mission of the ICID is to stimulate and promote the development of the management of water and land resources for irrigation, drainage, flood control and river training applications, including research and development and capacity building.

## **CONTENTS**

- 01 – Remote Sensing for groundwater flood mapping, monitoring, and short- and long-term forecasting**  
Joan Campanyà, Ted McCormack, Damien Doherty, Philip Schuler, Monika Kabza1, Ellen Mullarkey, Owen Naughton
- 02 – DiffuseTools: Improving national mapping of diffuse phosphorus pollution in surface runoff from Irish fields to support targeted management measures**  
Ian Thomas, Eva Mockler, Christopher Werner, Per-Erik Mellander and Michael Bruen
- 03 – Ireland changing the scale of Heavily Modified Waters Bodies designated under the Water Framework Directive**  
Nathy Gilligan and Emma Quinlan
- 04 – Impact of the 2015-2016 flood event on the incidence of acute gastrointestinal infections (AGI) in the Republic of Ireland – An epidemiological perspective on a hydrological problem**  
Martin Boudou, Eimear Cleary, Coilin ÓhAiseadha, Patricia Garvey, O’Dwyer Jean, and Paul Hynds
- 05 – Risk factor analysis of Escherichia coli and Pseudomonas aeruginosa occurrence in private domestic groundwater supplies in the Republic of Ireland**  
Luisa Andrade, John Weatherill, Paul Hynds, Jean O’Dwyer
- 06 – Development of a detailed tide and storm surge forecast system for the South West Coast of Ireland**  
Nigel Tozer Edmund Bridge Kate Day, Nigel Bunn, Jim Casey, Thomas Duffy and Eoin Sherlock
- 07 – Interactions, mechanisms and impact of future coastal urban flooding: A case study of Cork City**  
Jennifer Isabel Munro Kirkpatrick, Stephen Nash, Michael Hartnett, Joanne Comer, Agnieszka Indiana Olbert
- 08 – Protecting the City of Cork from flooding**  
Philip O’Kane
- 09 – Benefits of rainfall runoff approaches in Flood Relief Scheme Development**  
Tom Sampson, Caoimhe Downing, Anastasiya Ilyasova, Hannah Moore, Anthony Hammond
- 10 – Repeated measures risk assessment of the 2018 European drought on microbial groundwater quality in Southern Ireland**  
Jean O’Dwyer, Carlos Chique, John Weatherill, Paul Hynds
- 11 – Forecasting the impact of drought on water resources using seasonal rainfall forecasts**  
Brown, E.L, McBride, A., Hodgson, R., Counsell, C., and Almond, S.