

## **IRISH NATIONAL HYDROLOGY CONFERENCE 2015**

**Tuesday, 17<sup>th</sup> November 2015**

### **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 16<sup>th</sup> annual Irish National Hydrology Conference being held on Tuesday 17<sup>th</sup> November 2015 in the Hodson Bay Hotel. The conference provides a unique forum for attendees to share policy developments, research results, and practical solutions to engineering hydrology issues. This year's conference encompasses a wide range of developments in the fields of data acquisition and environmental sustainability .

### **MAIN TOPICS**

To mark the upcoming release of the Flood Studies Update (FSU) web portal later this year, a full session will be devoted to presentations from specially invited speakers on that topic. The conference also will address a wide range of other issues relating to hydrology including:

- Hydrological data acquisition
- Flood risk management
- Statistical hydrology
- Hydrology and environmental sustainability
- Case Studies

The papers to be presented will demonstrate how the outcomes of recent hydrological research are being implemented by practitioners

### **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

### SESSION 1: HYDROLOGICAL DATA ACQUISITION

- 01 – Past, current and future satellite missions and their application to Irish hydrology**  
O'Loughlin, F.E. (*University of Bristol*), Bruen, M. (*University College Dublin*), Bates, P.D. (*University of Bristol*), Schumann, G.J.P (*UCLA and Remote Sensing Solutions*).....3
- 02 – A passive proportional sampler to monitor overland flow**  
Ryan, D. and Forristal, D. (*Teagasc*).....14

### SESSION 2: FLOOD RISK MANAGEMENT

- 03 – Mechanisms of flooding in Cork City**  
Olbert, A.I., Hartnett, M., Comer, J., and Nash, S.J. (*NUI Galway*).....24
- 04 – Natural flood risk management in urban rivers**  
Ahilan, S. (*University of Leeds*), Guam, M. (*University of Leeds*), Sleight, A. (*De Montfort University*) .....35
- 05 – The implementation of a flood defence scheme in an urban environment**  
McCarthy, J. (*Arup*), O'Connell, G. (*Dublin City Council*), Weston, D. (*Dublin City Council*), Rhatigan, V. (*The Office of Public Works*).....45

### SESSION 3: STATISTICAL HYDROLOGY

- 06 – How rare the ongoing drought?**  
Reed, D. (*DWRconsult*).....59
- 07 – A statistical assessment of the small catchment hydrometric network in Ireland**  
Hynds, P. and Nasr, A. (*Dublin Institute of Technology*) .....71

### SESSION 4: HYDROLOGY AND ENVIRONMENTAL SUSTAINABILITY

- 08 – The role of hydrology in restoring Ireland's raised bogs: A review of a nationwide study**  
Mackin, F. (*RPS*), Flynn, R. (*Queens University Belfast*), Arbuckle, L. and Barr, A.G.. (*RPS*).....83
- 09 – Understanding hydrological flow patterns in conceptual catchment models to improve water quality modelling**  
Mockle, E. (*University College Dublin*), O'Loughlin, F.E. (*University of Bristol*), and Bruen, M. (*University College Dublin*)..... 95