

INTERNATIONAL COMMISSION ON WATER RESOURCE SYSTEMS (ICWRS)

Status Report June 2019

Commission membership

Andreas Schumann - President
Alberto Montanari - Past-President
Barry Croke - Vice-President
Zongxue Xu - Vice-President
Jean-Marie Kileshye Onema - Vice-President
Alberto Viglione - Secretary

Associated members:

Alla Kolechkina, Dan Rosbjerg, Gil Mahé, Ian Littlewood, John Ndiritu, Jose Luis Salinas, Junguo Liu, Kate Heal, Kim Young-Oh, Magdalena Rogger, Mike Simpson, Murugesu Sivapalan, Ronald van Nooyen, Ross Woods, S.K. Jain, Saket Pande, Stephen Mallory, Taha Ouarda

Description of activities April 2018 - May 2019

ICWRS Meeting in Beijing

Every other year, there is either an IAHS Scientific Assembly or an IUGG General Assembly. In the years between assemblies, ICWRS organizes the International Water Resources Management Conference (IWRM). The 8th of these meetings has taken place in June 2018 in Beijing (<https://iwr2018.bnu.edu.cn/>), organized by the Vice-President of ICWRS, Prof. Xu from the College of Water Sciences at Beijing Normal University. The topic of this symposium was “Innovative Water Resources Management under Changing Environment - Understanding Interactions and Making Balance between Humankind and Nature”. For this conference 142 papers were submitted (83 from the P.R. of China) where 65 were accepted (39 from P.R. of China) for oral presentations. The conference was attended by 156 scientists. The proceedings (60 papers) have been published in the Volume 379 of PIAHS (<https://www.proc-iahs.net/379/>). The Loucks lecture has been given by Prof. Wolfgang Kinzelbach.

ICWRS was involved in proposing the workshop “Control Methods for Water Resource Systems” at the IFAC (International Federation of Automatic Control) conference September 2019 in Delft.

ICWRS activity at the IUGG Assembly in Montreal (2019)

ICWRS has proposed and obtained two symposia

- “Floods: Processes, Forecasts, Probabilities, Impact Assessments and Management” (22 orals, 4 sessions) and

- “Comparative Inventories of Water Resources Systems and their Functioning - Methodology and Tools For their Assessment, Protection and Efficient Use” (16 oral presentations, 3 sessions).

ICWRS is co-convenor of the symposium “Time Series of Remote Sensing Data in Water Management” (5 orals, 1 session) and supports the IAHS symposium “Modeling Hydrological Processes and Changes under a Changing Environment” and the joint IASPEI, IAG, IAHS, IAGA, IAMAS, IACS, IAPSO, and IAVCEI symposium “Old Data for New Knowledge: Preservation and Utilization of Historical Data in the Geosciences”, where ICWRS will be represented by Alberto Viglione.

Contributions of ICWRS officers to the “Unsolved Problems in Hydrology” Initiative

Commission members contributed to the discussion at with several questions.

- Andreas Schumann: Sudden and abrupt changes of water management conditions?
- Alberto Montanari: Why do we see long term cycles in temperature, rainfall and river flows?
- Alberto Viglione: Do flood rich-poor periods exist? If so why?
- Barry Croke: How do we improve our understanding of tipping points?
- Barry Croke: How do we better capture and use the uncertainty in the outputs of hydrological models?

The most of these contributions are less specific for the topics of ICWRS, which are more located at the application of hydrology. In order to improve the design and operation of WRS e.g., we need good predictions of the volume of water available, it's temporal and spatial distribution, how susceptible these are to change (e.g. land use and climate change), as well as how far the system can be pushed before it collapses. Some of these problems are very basic and several relationships to other UPH exists. Thus, we see some problems to specify UPH for water resources systems

Website

The website has been updated at the address: <http://iahs.info/Commissions--W-Groups/ICWRS-Water-Resources-Systems.do>

Further planning

ICWRS started to prepare the 9th International Water Resources Management Conference which will be take place from 20 to 22nd of July, 2020 in Cairns, Australia. The topic will be: “Water resource management in a changing world: economic, environmental and societal tradeoffs”. It will be organized by Barry Croke, VP of ICWRS.

Andreas Schumann, President ICWRS
Alberto Viglione, Secretary ICWRS