

Editorial

This special issue of *Journal of Hydroinformatics* contains six papers that were originally presented at the 12th International Conference on ‘Computing and Control for the Water Industry. Information for Water Systems and Smart Cities (CCWI2013)’, held in Perugia (Italy), 2–4 September 2013. The papers have been fully rewritten and have undergone a rigorous peer review process. The CCWI Conferences are a series of Europe-based events but with participants from many countries of the world (Figure 1).

The main aim of the paper ‘Appropriate resolution time-scale to evaluate water saving and retention potential of rainwater harvesting for toilet flushing in single houses’ by Campisano & Modica (2015) is the modeling of rainwater harvesting tanks according to their role in the management of urban areas. The proposed model is used in a household case study for which reliable experimental data were available.

In the paper ‘Pump as turbine implementation in a dynamic numerical model: cost analysis for energy recovery in water distribution network’, De Marchis & Freni (2015) highlight the economic benefit of PAT application in water distribution networks as an alternative to the use of pressure-reducing valves (PRV). They also offer the case study of a small district of Palermo network (Italy).

In the paper ‘Water district sectorization for protection from contamination’, Di Nardo *et al.* (2015) propose the implementation of isolated district meter areas (i-DMAs) to protect the users of a water distribution system in the

case of a malicious attack. The effect of different partitioning and sectorization of the system is analysed by designing i-DMAs within a procedure based on graph theory and heuristic optimization. The proposed method is successfully tested with regard to a large network in Mexico.

The paper ‘Anomaly pre-localization in distribution–transmission mains by pump trip: preliminary field tests in the Milan pipe system’ by Meniconi *et al.* (2015) extends to water distribution–transmission systems transient test-based techniques used up to now mostly for fault detection of simple systems. The results of the diagnosis of the pipe system are corroborated by repairs executed by the water supply company in the area where possible anomalies have been pre-localized by means of the proposed procedure.

The dynamics of city development, and particularly the sealing of surfaces and land use change, play a crucial role in the functioning conditions of urban drainage systems. The model proposed by Mikovits *et al.* (2015), in the paper ‘A dynamic urban development model designed for purposes in the field of urban water management’, allows running several simulations with as few input data as possible to cover the possible range of changes showing differences in flooding according to the developed areas.

In the paper ‘Power use methods for optimal design of WDS: history and their use as post-optimization warm starts’, Saldarriaga *et al.* (2015) propose an extension to the optimal power use surface algorithm within a metaheuristic post-optimization process after a network has been designed. The proposed methodology is tested on four networks with three of them being benchmark problems.

As pointed out in the above short description of their content, the topic *Water engineering solutions for smart, liveable and sustainable cities* – the first in the list of topics of interest for CCWI2013 – is the *fil rouge* linking these papers. In fact they all deal with the urban environment, the modeling of hydraulic systems, and a valuable conveyance of theory to engineering applications. Then, no daring acrobatics were needed to publish them in the Journal as a result of a proper twinning of solid International

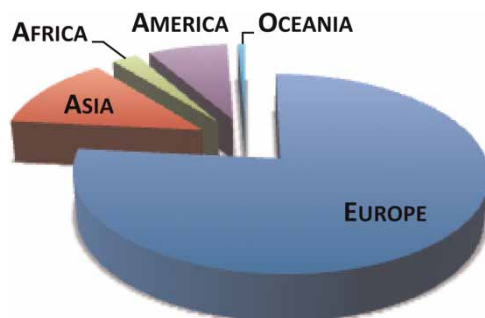


Figure 1 | CCWI2013 author provenance (from Brunone & Giustolisi 2014).

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Conference and Journal, with no compromise with the publish-or-perish logic of some special issues.

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- Mikovits, C., Rauch, W. & Kleidorfer, M. 2015 A dynamic urban development model designed for purposes in the field of urban water management. *Journal of Hydroinformatics* **17** (3), 390–403.
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