"Gheorghe Asachi" Technical University of Iasi, Romania

ANALYTICS FOR SUPPORTING URBAN WATER MANAGEMENT

Antonio Candelieri[1]*, Francesco Archetti[1,2], Enza Messina[1]

[1]*University of Milano-Bicocca, Department of Information, Systems and Communication, 336 Viale Sarca, 20126 Milano, Italy*
[2]*Consorzio Milano Ricerche, 53 Via Cozzi, 20126 Milano, Italy*

Abstract

Water distribution networks are complex systems that require innovative technological solutions enabling an integrated and rational water resource management. This paper presents the application of data analytics approaches on flow and pressure data, continuously measured at crucial points of the network, for improving efficiency of leak localization. The general goal is to reduce time and costs for physical check and consequent rehabilitation activities.

Although the general benefits provided by the proposed approach, some criticalities related to the technological innovation level of the water distribution networks are highlighted and some steps are suggested with the aim to align water consumption metering, flow and pressure monitoring and decision making. This alignment may enable a *Smart Water Distribution Network* paradigm and also improve results presented in this paper.

Key words: clustering, leakages localization, metering, simulation, water distribution network management

---

* Author to whom all correspondence should be addressed: E-mail: antonio.candelieri@unimib.it; Phone +39 02 6448 7919