

Interactive comment on “Online data processing for proactive water distribution network operation” by J. Machell et al.

Anonymous Referee #1

Received and published: 9 September 2013

General comments:

The paper does not describe the development of new technologies, and no detailed description of the applied technologies. The scientific level of the paper is therefore limited. The special interest in this paper is combining of existing techniques in one monitoring system, and implementing this to monitor a real water system, using real data. This makes it sufficiently interesting for publication.

The discussion section previews possible future applications / developments. As a result, this section is a bit hypothetical (all kind of possible applications, if certain developments have taken place).

Specific comments:

C84

1. Page 261, Title, word “operation”. A water distribution network is a quite static system, and there is little to be operated. Why not use the word “monitoring” rather than “operation”.
2. Page 263, line 24. Other papers also describe methods to identify optimal sensor locations (like Ami Preis, et al, 2011; James-A. Goulet, et al (2013)
3. Page 263, line 25 / 267, line 26: I think the typical situation in the UK is described. Utilities in the Netherlands started earlier making robust sensor locations in the networks (some with permanent power and communication facilities), and typically the data quality is better. However, the number of sensors in the network is typically much lower
4. Page 269, line 8: Not all detection algorithms return binary classification. The method described by Romano / Kapelan / Savic (2012) generates a probability value between 0 and 1.
5. Page 269, line 22: The trade off between false alarms and non-detection of smaller burst event occurs with any method and not only with flat-line thresholds, even with the method described in this paper (by setting the a% confidence value)
6. Page 270, line 25: The number of alerts from the flat line system is ridiculous (equals to 2.5 alerts per sensor per day). Obviously, the threshold values are chosen too low. This can't be considered as a good configured monitoring system.
7. Page 270, line 26: Classifying events as “abnormal” is somewhat questionable. I would almost say that any alert can be classified as “abnormal” (for there has to be some deviant value in the measurements, in order to generate an alert). Classifying such events is a bit subjective. And the method is evaluated to working OK, though an alert is raised in a situation without any collapse of the network.
8. Page 275, line 17: Add reference to Mounce, Mounce and Boxall (2012)

C85

