**Drinking Water
Engineering and Science
Discussions**

Interactive comment on "Online modelling of water distribution systems: a UK case study" by J. Machell et al.

Anonymous Referee #2

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General comments:

This paper presents an on-line hydraulic simulation model, which can be used to detect network events, such as main burst, at an early stage. This can be used to improve the operation of a water distribution network. This is an interesting paper. The near real-time modelling presented in this paper also addresses a significant industrial challenge – customer service improvement in water industry. This paper is appropriate for publication in DWES.

This paper is well written. The authors give proper credit to related work and their contribution is clearly indicated. The content of the references are relevant. The number and quality of the references are appropriate.

Specific comments:

1) In this paper, the results from only one DMA from a large area comprising 16 DMAs are presented. Do the size and complexity of the modelling area have a significant impact on the modelling speed, required computational resources and the quality of results?

2) Since the case study focuses on one DMA from a large area. A description of the actual DMA that is modelled will be appreciated.

3) Page 5 lines 15 – 16: The authors state "During calibration, even low accuracy data will produce an apparently sensible, if not wholly accurate solution". Can the authors explain why? Is there any noise within the model that can cause this? More discussions are required here.

4) Page 7 lines 24: Can the authors be more specific about the effects within the pipes? Are they the pressures and flows in the pipes? Any other effects that can be detected?

Technical corrections:

1) In the caption of Figure 1, "pips" should be "pipes".

Other minor comments include:

1) Page 5 line 1: A brief introduction of the software – Aquis 1.47 (7T) - will be appreciated by readers.