



GISMOWA - GIS assisted monitoring of drinking water quality

Larsen, Sille Lyster; Rygaard, Martin; Christensen, Sarah Christine Boesgaard; Albrechtsen, Hans-Jørgen

Published in:
10th annual meeting of DWF16

Publication date:
2016

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

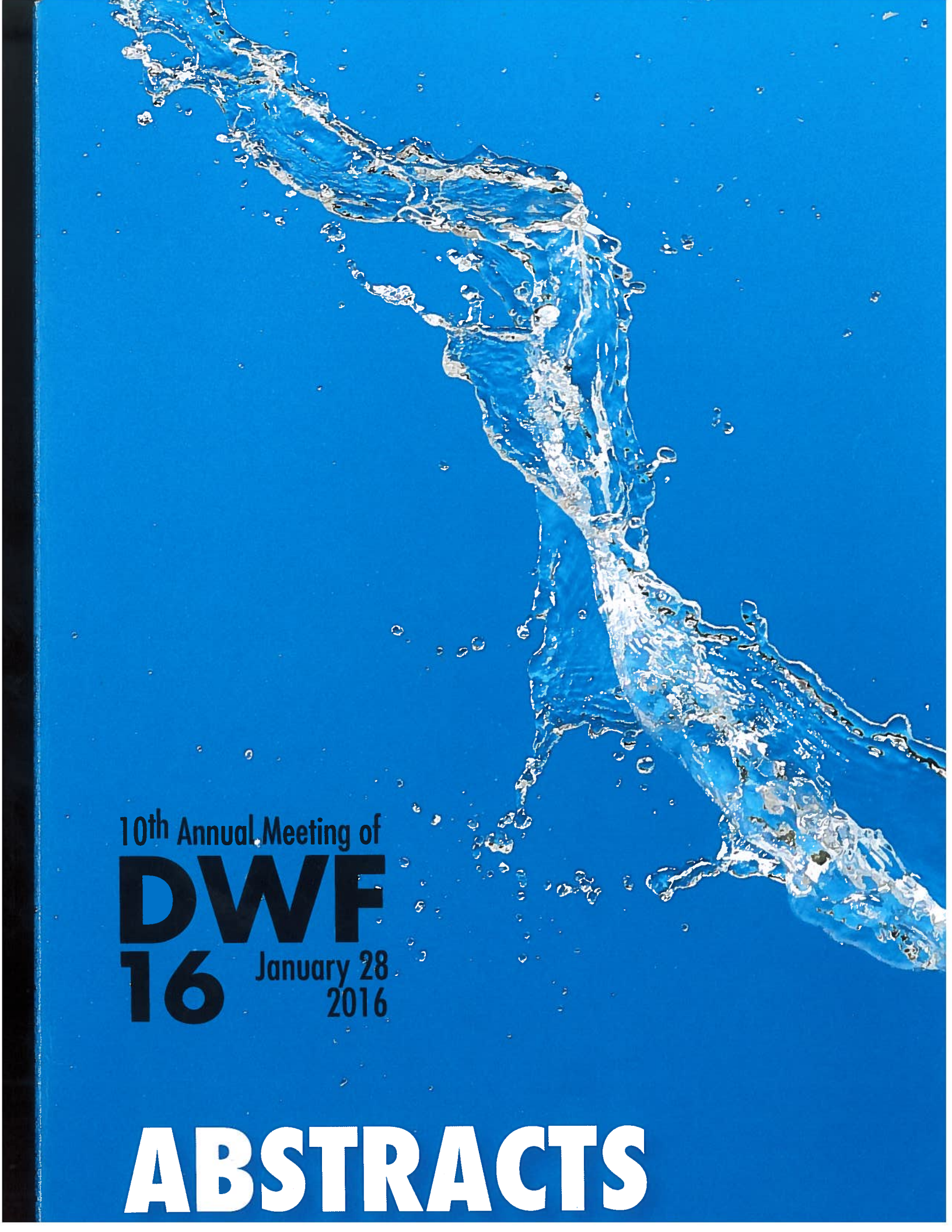
Citation (APA):
Larsen, S. L., Rygaard, M., Christensen, S. C. B., & Albrechtsen, H-J. (2016). GISMOWA - GIS assisted monitoring of drinking water quality. In *10th annual meeting of DWF16: Abstracts* (pp. 26-26). Danish Water Forum.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



10th Annual Meeting of
DWF
16 January 28
2016

ABSTRACTS

GISMOWA – GIS assisted monitoring of drinking water quality

*S.L. Larsen, M. Rygaard, S.C.B. Christensen & H.-J. Albrechtsen, all DTU**

Abstract

In-depth knowledge of the water distribution system is crucial to develop water quality baseline data at representative sites and to provide a pro-active approach to deal with emerging water quality issues. GISMOWA is a new risk-based analysis tool to identify and prioritise pipe segments for monitoring water quality and to comply with existing monitoring guidelines. The tool was designed to integrate in a GIS environment multiple parameters categorized as 1) Weaknesses in the system, e.g. residence time, 2) External threats, e.g. contaminated sites, and 3) Sensitive consumers, e.g. hospitals.

A multi-criteria decision-making approach was applied to evaluate multiple sampling site parameters and map zones particularly suitable for water quality monitoring. Applied on Danish water distribution systems, GISMOWA was shown to be a transparent and simple-to-use tool that facilitates complete overview of the distribution system, sensitive consumers and consumers in general, which is a precondition for a HACCP-based monitoring strategy of drinking water.

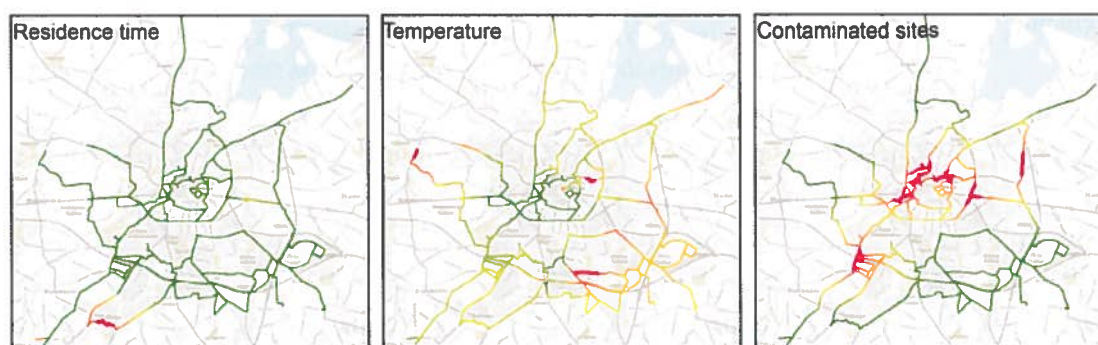


Figure 1 Example of suitability maps for three selected parameters projected onto the main piping network in Odense, Denmark. Data collected from VCS Denmark. Green shows pipe segments of low suitability and red visualises pipe segments of high suitability for monitoring.

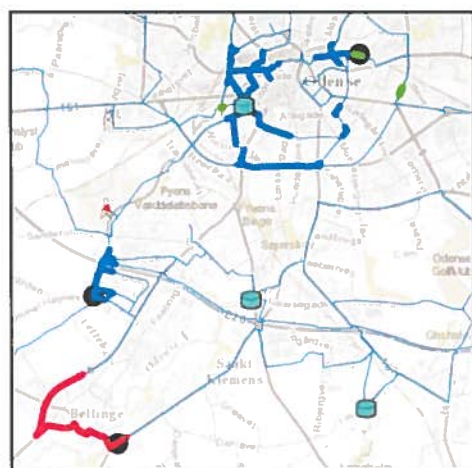


Figure 2 Example of weighted overlay results projected onto the main piping network in Odense, Denmark. Thin blue lines outlines the main piping network, while fat lines show pipe stretches particularly suitable for monitoring of sensitive consumers (blue), microbial regrowth (red), and intrusion of contaminants (green).

* slyla@env.dtu.dk, mryg@env.dtu.dk, scch@env.dtu.dk, hana@env.dtu.dk: Dept. of Environmental Engineering, Bygningstorvet, Bldg. 115, 2800 Kgs. Lyngby, Denmark