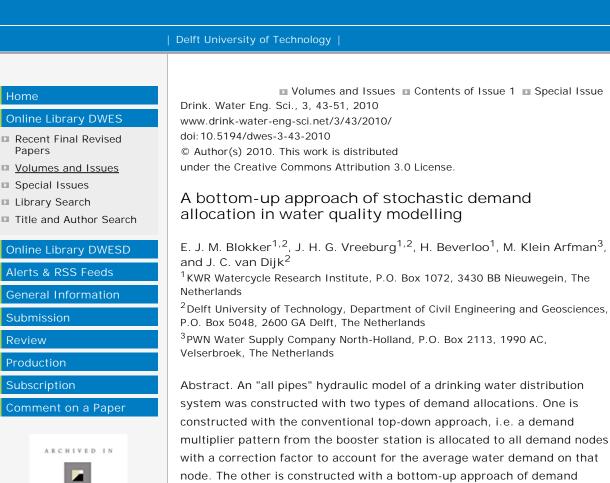
# Drinking Water Engineering and Science



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- Please Note: Updated Reference Guidelines The editorial board welcomes two new editors: Pierre Le-Clech from Autralia and Emile Cornelissen from the Netherlands
- DWES will publish the best papers of the Filtech 2011 conference

## **Recent Papers**

01 | DWESD, 18 Oct 2010: Groundwater contamination due to lead (Pb) migrating from Richmond municipal landfill into Matsheumhlope aquifer: evaluation of a model using field observations

02 | DWES, 27 Sep 2010: Monitoring water distribution systems: understanding and managing sensor networks

03 | DWESD, 22 Sep 2010: Water supply project feasibilities in fringe areas of Kolkata, India

The stochastic water demand patterns were constructed with the end-use model SIMDEUM on a per second basis and per individual home. Before applying the demand patterns in a network model, some temporal aggregation was done. The flow entering the test area was measured and a tracer test with sodium chloride was performed to determine travel times. The two models were validated on the total sum of demands and on travel times.

allocation, i.e., each individual home is represented by one demand node

drinking water distribution system of approximately 10 km of mains and serving ca. 1000 homes. The system was tested in a real life situation.

with its own stochastic water demand pattern. This was done for a

The study showed that the bottom-up approach leads to realistic water demand patterns and travel times, without the need for any flow measurements or calibration. In the periphery of the drinking water distribution system it is not possible to calibrate models on pressure, because head losses are too low. The study shows that in the periphery it is also difficult to calibrate on water quality (e.g. with tracer measurements), as a consequence of the high variability between days. The stochastic approach of hydraulic modelling gives insight into the variability of travel times as an added feature beyond the conventional way of modelling.

■ <u>Final Revised Paper</u> (PDF, 192 KB) ■ <u>Discussion Paper</u> (DWESD)

Citation: Blokker, E. J. M., Vreeburg, J. H. G., Beverloo, H., Klein Arfman, M., and van Dijk, J. C.: A bottom-up approach of stochastic demand allocation in water quality modelling, Drink, Water Eng. Sci., 3, 43-51,

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