

Introduction

UWOT is an urban water cycle model that acknowledges every urban water flow as result of a demand. For this reason, it simulates demand signals instead of flows. This approach has the advantage of directly representing the principal purpose of infrastructure, which is to serve the need for water supply and wastewater disposal.

UWOT (Rozos et al., 2013; Rozos and Makropoulos, 2013, 2012) distinguishes between two signal types, the push and pull signals. The push signals express a need to dispose a specific amount of water (e.g. the output of a washing machine). The pull signals express a demand for a specific amount of water (e.g. the water required for the operation of a washing machine). The water flows on the same direction with push signals whereas flows on the opposite direction from pull signals. Another difference between push and pull signals is that pull signals do not bear a qualitative characterization because the water that covers a demand is assumed to meet the quality standards imposed by regulations. On the other hand, push signals are characterized by a qualitative value that can express any preselected water quality parameter (a single preselected parameter for each UWOT project). In this document the quality parameter is assumed to be BOD.

The specifications of the water appliances are stored in a database called “Technology Library”. Based on these specifications, UWOT estimates the demand signals emitted from the household appliances. These signals are aggregated at household level or at a higher level if necessary. The signals can also be routed to different water resources according to their qualitative and quantitative conditions.

Videos and demos

Videos demonstrating UWOT can be found at:

<https://drive.google.com/drive/folders/18Rul9zn281JCmA7IrQMCR8vrZg-DlGVv?usp=sharing>

A video that demonstrates how to put components together to form a simple network.

[1.SimpleProject.avi](#)

A video that demonstrates a household that incorporates blue green solutions.

[2.BlueGreen.avi](#)

Two videos that demonstrates the GIS capabilities of UWOT.

[3.SpatialIntro.avi](#)

[4.AthensWhole.avi](#)

A video that demonstrates the operation of a pump storage schem.

[5.Energy.avi](#)

References

- Rozos, E., and C. Makropoulos, Source to tap urban water cycle modelling, *Environmental Modelling and Software*, 41, 139–150, doi:10.1016/j.envsoft.2012.11.015, Elsevier, 1 March 2013.
- Rozos, E., C. Makropoulos, and C. Maksimovic, Rethinking urban areas: an example of an integrated blue-green approach, *Water Science and Technology: Water Supply*, 13 (6), 1534–1542, doi:10.2166/ws.2013.140, 2013.
- Rozos, E., and C. Makropoulos, Assessing the combined benefits of water recycling technologies by modelling the total urban water cycle, *Urban Water Journal*, 9 (1), doi:10.1080/1573062X.2011.630096, February 2012.
- Rozos, E., C. Makropoulos, and D. Butler, Design robustness of local water-recycling schemes, *Journal of Water Resources Planning and Management - ASCE*, 136 (5), 531–538, doi:10.1061/(ASCE)WR.1943-5452.0000067, 2010.