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IMPROVING ENERGY EFFICIENCY IN WATER DISTRIBUTION SYSTEMS BASED ON WATER CONSUMPTION PROFILING

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Abstract

Together with other public utilities, water supply systems management aims to provide an efficient operation of the system and lower operational costs. In complex water distribution systems there is a large variety of consumers, which differ from one another not only by values of inflows, but also by how this inflows vary from hour to hour. This paper presents a self-organizing based approach to the problem of classification of water consumption profiles from the nodes of a water distribution system. This classification procedure is completed by a linear regression process that finally produces a set of typical regressors and profiles. These models were applied to generate medium-term forecasts for the water consumption profiles in a complex distribution system.

Keywords: energy efficiency; water consumption forecast; self-organization; regression models

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