Abstract

An urban system is influenced by many disruptions that may cause failures for it, in the end. In order to maintain continuity of its operations, analysis of its components operation becomes very necessary. To do this, water infrastructure is chosen from its components to analyze the evolution of the water flow, when the population consumes the drinking water. This infrastructure is essential for the urban system and it is used daily by the population. For examining how to maintain water consumption, the evolution of the discharge head (the maximum height reached by the pipe after the pump) is analyzed and monitored. This height is strongly linked to the drinking water rate. Using water is estimated by a Markov model and the futures heights are prevented. This prevention requires the calculation of the transition probability of the water flow used by the population. An example is provided, where it is determined the level of risk. Under this one, the urban system operates in security, against failures.

Key words: maintaining, risk, transition probability, urban stability, water flow