

Water Leakage Detection System of Pipe Line using Radial Basis Function Neural Network

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Abstract : Clean water is an essential and fundamental human need. Therefore, its supply must be assured by maintaining the quality, quantity and water pressure. However the fact is, on its distribution system, leakage happens and becomes a common world issue. One of the technical causes of the leakage is a leaking pipe. The purpose of the research is how to use the Radial Basis Function Neural (RBFNN) model to detect the location and the magnitude of the pipeline leakage rapidly and efficiently. In this study the RBFNN are trained and tested on data from EPANET hydraulic modeling system. Method of Radial Basis Function Neural Network is proved capable to detect location and magnitude of pipeline leakage with of the accuracy of the prediction results based on the value of RMSE (Root Meant Square Error), comparison prediction and actual measurement approaches 0.000049 for the whole pipeline system.

Keywords : radial basis function neural network, leakage pipeline, EPANET, RMSE

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