Abstract

      This paper presents a comparison of prediction methods for alum dosage used in water supply treatment process. Neural networks which is a common method has been used in many works. In this research, we compared results from support vector machine, decision tree and decision tree forest to those from neural networks. Seven input variables, i.e. turbidity, alkalinity, pH, conductivity, color, suspended solids, and NH_3-N, relating to reaction of coagulation were used. Then we inserted a new input variable by applying genetic programming and decrease input variables by using only main input variables, i.e. turbidity, alkalinity and pH. The data in this research had been collected from Bangkhen Branch Office of Metropolitan Waterworks Authority from 1 January 2006 to 31 December 2006. Our experimental results showed that neural networks yielded the most accuracy in case of seven input variables. Decision tree forest yielded the most accuracy in case of eight input variables (seven input variables with a new input variable generated from genetic programming). Neural networks yielded the most accuracy in case of three input variables (only three main variables). And decision tree forest with eight input variables yielded the highest accuracy compared to all cases.