

Dissolved Oxygen Prediction Using Support Vector Machine

Authors : Sorayya Malek, Mogeab Mosleh, Sharifah M. Syed

Abstract : In this study, Support Vector Machine (SVM) technique was applied to predict the dichotomized value of Dissolved oxygen (DO) from two freshwater lakes namely Chini and Bera Lake (Malaysia). Data sample contained 11 parameters for water quality features from year 2005 until 2009. All data parameters were used to predicate the dissolved oxygen concentration which was dichotomized into 3 different levels (High, Medium, and Low). The input parameters were ranked, and forward selection method was applied to determine the optimum parameters that yield the lowest errors, and highest accuracy. Initial results showed that pH, water temperature, and conductivity are the most important parameters that significantly affect the predication of DO. Then, SVM model was applied using the Anova kernel with those parameters yielded 74% accuracy rate. We concluded that using SVM models to predicate the DO is feasible, and using dichotomized value of DO yields higher prediction accuracy than using precise DO value.

Keywords : dissolved oxygen, water quality, predication DO, support vector machine

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