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The Use Support Vector Machine and Back Propagation Neural Network for Prediction of Daily Tidal Levels Along The Jeddah Coast, Saudi Arabia

Authors : E. A. Mlybari, M. S. Elbisy, A. H. Alshahri, O. M. Albarakati

Abstract : Sea level rise threatens to increase the impact of future storms and hurricanes on coastal communities. Accurate sea level change prediction and supplement is an important task in determining constructions and human activities in coastal and oceanic areas. In this study, support vector machines (SVM) is proposed to predict daily tidal levels along the Jeddah Coast, Saudi Arabia. The optimal parameter values of kernel function are determined using a genetic algorithm. The SVM results are compared with the field data and with back propagation (BP). Among the models, the SVM is superior to BPNN and has better generalization performance.

Keywords : tides, prediction, support vector machines, genetic algorithm, back-propagation neural network, risk, hazards
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