

Estimation of Sediment Transport into a Reservoir Dam

Authors : Kiyoumars Roushangar, Saeid Sadaghian

Abstract : Although accurate sediment load prediction is very important in planning, designing, operating and maintenance of water resources structures, the transport mechanism is complex, and the deterministic transport models are based on simplifying assumptions often lead to large prediction errors. In this research, firstly, two intelligent ANN methods, Radial Basis and General Regression Neural Networks, are adopted to model of total sediment load transport into Madani Dam reservoir (north of Iran) using the measured data and then applicability of the sediment transport methods developed by Engelund and Hansen, Ackers and White, Yang, and Toffaleti for predicting of sediment load discharge are evaluated. Based on comparison of the results, it is found that the GRNN model gives better estimates than the sediment rating curve and mentioned classic methods.

Keywords : sediment transport, dam reservoir, RBF, GRNN, prediction

Conference Title : ICEBESE 2014 : International Conference on Environmental, Biological, Ecological Sciences and Engineering

Conference Location : Paris, France

Conference Dates : June 26-27, 2014