Geophysical Research Abstracts
Vol. 13, EGU2011-2224, 2011
EGU General Assembly 2011

Drought Prediction Using Artificial Neural Network

Jie-Lun Chiang (1) and Chiang Wei (2)

(1) National Pingtung University of Science & Technolog, Dept. of Soil and Water Conservation,(jlchiang@mail.npust.edu.tw), (2) National Taiwan University, Experimental Forest, ChuShan Township, Province Of China Taiwan (d87622005@ntu.edu.tw)

In Taiwan, the average annual rainfall reaches 2500 mm which is much higher than the world average, 834 mm. Due to the uneven spatial and temporal distribution of rainfall, most rainfall concentrated from May to October, and about 80% of rainfall runs into the sea. In recent years, water supply faces a big challenge under climate change. Artificial neural network (ANN) recently has been successfully applied in classification and prediction. In this study, ANN was proposed to predict drought in Taiwan.
The characteristics related to reservoir drought such as reservoir storage and inflow were used to analyze the reservoir drought possibilities. In the study, Maximum Likelihood and Bayesian Classifier were also used to compare with the result predicted by ANN. The results showed ANN outperformed other approaches. The drought prediction using ANN will provide the information for decision-making in the reservoir operation and management.

Keywords: drought, ANN, prediction