عنوان مقاله:

Multi Layer Perceptron Networks for Streamflow Forecasting

محل انتشار:

اولین کنفرانس بین المللی منابع آب با رویکرد منطقه ای (سال: 1388)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

Prediction of streamflow plays a determinant role in the allocation of water resources. This study applies Multi Layer Perceptron (MLP) Networks optimized with three different training algorithms, including resilient back propagation (MLP_RP), variable learning rate (MLP_GDX), and Levenberg-Marquardt (MLP_LM), to forecast streamflow in Aspas Watershed, located in Fars province in southwestern Iran. The activation function used in this study was tangent sigmoid, and different types of input vectors were considered. The algorithms were trained and tested using 3 years of data. Antecedent streamflow with one day time lag constituted the first input vector, and MLP with this vector, labeled as MLP1 was the first model. Inclusion of streamflow with two, three, and four time lags led to input vectors 2, 3, and 4 which when combined with MLP resulted in MLP2, MLP3 and MLP4, respectively. The results showed that MLP optimized with the resilient back propagation algorithm with third input vector (MLP3_RP) was superior to other MLPs.

کلمات کلیدی:

Streamflow, Multi Layer Perceptron, Algorithms, Forecasting