



Daily streamflow forecasting using PSO-BP neural network

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An artificial neural network (ANN) based on hybrid algorithm combining particle swarm optimization (PSO) algorithm with back-propagation (BP) algorithm is proposed to forecast the daily streamflows in a catchment located in a semiarid region in Morocco. The PSO algorithm was showed to converge rapidly during the initial stages of a global search. The BP algorithm, on the contrary, can achieve faster convergent speed around global optimum. By combining the PSO with the BP, the hybrid algorithm referred to as BP-PSO algorithm is adopted in this paper. To evaluate the performance of the hybrid algorithm, BP neural network is also involved for a comparison purpose. The results show that the neural network model evolved by PSO-BP algorithm have superior predictions and better convergence performance. The well-trained neural network can be used as a useful tool for streamflow forecasting.