



Intelligent estimation of daily evapotranspiration using

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Intelligent estimation of daily evapotranspiration using
artificial neural network

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Abstract

Evapotranspiration (ET) is one of the parameters in water resources management which is attractive for design of irrigation systems. Due to interaction between meteorology parameter, there are nonlinear relations for assessing the evapotranspiration. Artificial neural networks are innovative approaches for estimation and prediction by using learning concept. In this study, by using the daily data of Gorgan synoptical station in Golestan province/ Iran the multilayer perceptron with back propagation learning rule was trained. Five different ANN models comprising various combinations of daily climate variable, i. e. air temperature, sunshine, wind speed and humidity was developed to evaluate degree of effect of each input variables on ET. A comparison is made between the estimated provide by ANN models and ET-values estimated by FAO-Penman-Monteith (F-P-M) method. The results show that ANN models perform better than experimental relation.

Keyword : Evapotranspiration, Artificial neural network, Penman-Manteith, Gorgan.