



Evaporation Estimation by Multilayer perceptron Based Artificial Neural Network and Multiple Linear Regression Techniques

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Abstract: In the present study an attempt has been develop artificial neural network (ANN) and multiple linear regressions (MLR) for estimation of weekly evaporation (Ep) for Pantnagar, Uttarakhand, India. The weekly data of temperature (T), relative humidity (Rh), wind velocity (W), sunshine hours (S) and evaporation (Ep) data of years 1976-2005 were used to train the models and remaining data of years 2006-2014 were used for test the models for ANN and MLR. The performance of the ANN with four input parameters were better than the MLR (for the test data set, R^2 for ANN with DBD and L-M learning rule varies from 0.9046 to 0.8975, CE varies from 0.9603 to 96.25 and RMSE varies from 1.0322 to 1.0062 by trial and error methods).

Keywords: Activation functions, Artificial neural network (ANN), Learning algorithm, Meteorological parameters, Multiple-linear regression (MLR)
