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Hydrology and Earth System Sciences Discussions

Interactive comment on "Multi-criteria validation of artificial neural network rainfall-runoff modeling" *by* R. Modarres

Anonymous Referee #2

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The paper introduces a comprehensive multi-criteria validation test to evaluate the performance of different models. It recommends not relying on one metric alone to differentiate between different models which may result in inaccurate conclusions. The discussion paper used different topologies for ANN modeling approach, in addition to a regression model, for modeling the rainfall-runoff over the Plasjan Basin to show up the contradicting evaluating results that may avoided when applying the non-parametric tests rather than global statistics measures. It highlighted the importance that the simulated runoff should reflect the relevant hydrological characteristics of the observed runoff in both magnitude and frequency. It has been concluded that global statistics could not capture the probability distribution of the observed stream flow. In my opin-

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Discussion Paper

ion, the merits of the paper would therefore lie in (1) a description and discussion of modeling aspects related to the use of ANN as a rainfall-runoff model, (2) a brief review of global statistics to compare between different modeling application results, (3) a comprehensive presentation of additional graphical and numerical tests.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 3449, 2008.