

Interactive comment on “Technical Note: Application of artificial neural networks in groundwater table forecasting – a case study in Singapore swamp forest” by Y. Sun et al.

Anonymous Referee #2

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The manuscript presents an application of ANNs for the prediction of groundwater levels. This kind of application is not new in hydrogeology, since ANNs are well known from literature and are used in hydrology since at least a decade. The Authors correctly emphasize the case study, rather than the methodology itself. However, there are some important issues in this work, which make it unsuitable for publication. These are:

1. The Authors say the used reservoir levels and rainfall as input to the ANN. It is not clear if the used lagged data or data at the step before the output. 2. It is not clear how the Authors assumed the architecture of the network and how they chose the input.

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3. Training data set seems to be too limited. I wonder if this may cause overfitting problems, as it seems to be. 4. Looking at figures 3 and 5 as well as to table 1, it seems that there is an immediate decay of fitness, when the prediction is pushed at 3 and 7 days ahead. This may be related to overfitting problems or to a bad selections of the input. 5. The ANNs fail at reproducing peaks and dry periods, in particular for 3 and 7 days ahead prediction. Again, this seems to be related to an improper choice of the input or to a lack of information content of the input. 6. It is not clear if the Authors compared their model with a simpler one, i.e. linear models, like ARX or ARMAX. Maybe, these models may have similar performances with the proposed ANNs.

In summary, I think there are too many fundamental issues on the proposed application, which, I think, make this technical note not suitable for publication.

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