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Hydrology and Earth System Sciences
Discussions
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Interactive comment on "Using Long Short-Term Memory networks to connect water table depth anomalies to precipitation anomalies over Europe" *by* Yueling Ma et al.

Anonymous Referee #1

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Authors used the LSTM network to forecast water table depth in Europe and analyzed the effects of local elements, which is very interesting. Comments are shown as follows: 1. Line 63-64: The most obvious advantage of ANNs is not using learnable parameters. Some basic machine learning models, such as MLP, can also adapt weights and bias.

2. It is suggested that the authors should describe the relationship between ANN and RNN before introducing the details of RNN. The same problem occurs in the introduction of LSTM. The limitation of RNN is not introduced first.

3. Line 71. Lots of research should be cited related to RNN rather than ANN here.

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Discussion paper

4. Line 129. Why did the authors say they have the same architecture of hidden neurons as Gers et al. (2000) but without the detailed introduction of Gers et al. (2000) or the architecture?

5. In equation (3), some representation should be shown as subscript

6. Line 194. TSMP should be written in full name when it shows for the first time.

7. The website of data access should be shown in this paper.

8. Figure 5 shows the result of the training dataset. The good performance of the training dataset cannot prove that the model is good. It is suggested that the test dataset should be used to show the result of the model.

9. Line 311. It is confusing that the authors say Figure 6 is based on the categories in Table 3, but the categories seem to base on Table 1 in Figure 6.

10. When C3 is shown, it only means that the training process of the model has some problems and needs to be modified further.

11. Line 365. What is the standard of the selection of Pixels 1-3?

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