

Responses #2 to review comments for Manuscript #Hess-2022-236 “Advance prediction of coastal groundwater levels with temporal convolutional network.”

Dear Editors and Reviewers:

Thanks for your constructive comments. We have addressed these comments carefully and revised the manuscript accordingly. The responses to reviewers' comments are listed below sequentially. The revisions in the tracking manuscript are highlighted in **red**. The grammar has been as well checked and revised through the manuscript.

Reviewer 1:

Accepted as is.

Response: Thanks very much for the review. We are glad that the paper could be accepted.

Reviewer 2:

Comments to “Advance prediction of coastal groundwater levels with temporal convolutional and long short-term memory networks”

This study evaluated two DL algorithms (TCN and LSTM) in predicting the groundwater levels of a coastal aquifer in China, Laizhou Bay. The results demonstrated that both models showed great ability to learn complex patterns in advance using historical data with different leading periods. By comparing the simulation accuracy and efficiency, the TCN-based model slightly outperformed the LSTM-based model but less efficient in training time.

Response: Thanks very much for the overall positive review of this paper.

I think this paper is well organized and easy to read, and the conclusion is well supported by the results. This is a good work in groundwater prediction. In addition, the authors have made sufficient revisions in accordance to reviewers' comments. However, I still have a small suggestion to increase the readability, the authors could

have a discussion on the influence of human activities which are not considered in this study (e.g., groundwater pumping for agriculture activities) on the performances of two DL methods.

Response: Thanks for the suggestion. We agree that human activities such as groundwater pumping has an effect on the prediction of groundwater level. Since we do not have detailed pumping data in this area, the potential effect has been added in discussion 4.4. Meanwhile, we are trying to add electricity consumption data in the model, which is a factor to reflect the amount of groundwater pumping indirectly. This will be discussed in our future work.