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Hydrology and Earth System Sciences
Discussions

Interactive comment on "Multi-step ahead daily inflow forecasting using ERA-Interim reanalysis dataset based on gradient boosting regression trees" *by* Shengli Liao et al.

Anonymous Referee #2

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Dear Editor/Authors I went through the manuscript. Generally, the manuscript has been well organized. However, it needs substantial revisions to be considered for publications in the journal. My main concerns can be summarized as follows: 1- P1, L6, In abstract the authors stated that "The impacts of climate change and human activities make accurate inflow prediction increasingly difficult, especially for longer lead times". As far as I know, the climate change deals with long term trends, say the climate variation over 20 years. I cannot understand relevance of the abovementioned with climate change impacts and human activities. 2- The authors have to clearly indicate which model was developed for the inflow forecasting. At first they have to demonstrate if they used conceptual models or data driven models. What is the advantage of the

developed model? 3- The input selection for multi-day ahead forecasting should be discussed according to available literature. It is essential why the input structure of the longer period is not updated following the earlier stage forecasts. 4- Literature should be updated discussing on more papers addressing multi-step ahead forecasting. 5- The authors employed gradient boosting regression trees as an ensemble framework. More explanations required about ensemble members. 6- Uncertainty analysis should be carried out to show how much the predictions are confident. As the lead time increases, the metrics reveal errors are increasing drastically. Moreover, high uncertainties are expected to associate with such models. Please discuss this issues accordingly. 7- Concerning inflow predictions, please indicate efficiency of the proposed model to simulate and predict extreme values which are of great importance.

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