

**Review of “Long-term ensemble forecast of snowmelt inflow into the Cheboksary reservoir under the two different weather scenarios” by Gelfan et al. (hess-2017-389)**

The manuscript by Gelfan et al. is clear and well written. The authors have conducted a well thought out study that presents a long-term ensemble methodology applied to water inflows into the Cheboksary reservoir (Volga river, central part of European Russia). They used a semi-distributed hydrological model to calculate an ensemble of hydrographs using two different sets of weather ensembles: ESP (Ensemble Streamflow Prediction) based forecast constructed from observed weather data, and WG (Weather generator) based forecast that simulates synthetic data using a multi-site weather generator on the basis of monte-carlo simulations.

The importance of the study area is emphasised in the introduction and the literature review is well presented, highlighting the gaps in the research field and explaining the scientific contribution of this paper in comparison to previous studies. Research questions are clear and the method section is well structured as it is presented schematically in form of subsections.

However, I believe more room needs to be given for discussions on section 4, in particular in a few subsections, as in my opinion some of the results are presented yet not discussed. More specifically:

- Subsection 4.2: Results of parameter estimation and model testing are described and referred to the supplementary materials, however I did not find an actual “discussion” on the findings.
- Subsection 4.3.2: Figure 6 is presented and shortly described yet I expected a brief discussion on the behaviour of daily forecast ensembles in comparison to the observed inflow data before seeing the boxplots on figure 7.

On section 5 I recommend to summarize the main findings of the investigation in only two main points, in order to match the research questions, thus points 1 and 2 could be merged into one. In addition, instead of discussing/presenting current and future work specific to the authors I would prefer to read your opinion on future advancements on the research field in general on the basis of your findings. Hence I suggest rephrasing this last paragraph.

Overall, I believe this research is very much in line with the topic of this special issue called “Sub-seasonal to seasonal hydrological forecasting”, therefore I trust that after addressing the comments within this review and some revisions it can be considered for potential publication in HESS.

Best regards,

**Specific comments:**

P3.L33: Replace “sreamflow” with “streamflow”

P9.L28: The notation "Figure x" is used here while in the rest of the manuscript the notation adopted was "Fig. x". Please choose one formatting and adapt in order to be consistent.

P13.L18: Replace "respecrively" with "respectively"

P20.L5-11: I would prefer to see this as part of section 4.

P23.L6-15: I would prefer to see this as part of section 4, from "A two sided..."

P24.L12: Remove the parenthesis in "(Weigel et al., 2007)"

Figure 1: Please improve figure resolution, whereas words are a bit hard to read. Also check the legend, I am not sure what the orange circle with black dots represents since it is not mentioned anywhere in the text. If they are not necessary please remove them from the map.

Figure 3: Please re-arrange order in the caption so as to present panels in alphabetical order, I believe this would make the reading easier. I also suggest removing the black line since it is not necessary and brings confusion on the plot.

Figure 5: I find the legend confusing since black triangles and black circles supposedly represent ESP and WG based forecasts in general while at the same time represent ESP and WG based forecasts for "number of days with inflow discharge above maximum ( $N_{qMax}$ )". Instead of representing "W", "Qmax", "Nq" and "Nqmax" with coloured squares, which are not observed after in the Taylor diagram, I suggest to use a different type of polygon or symbol representing "W", "Qmax", "Nq" and "Nqmax", maybe empty instead, and to colour them on the basis of ESP or WG based forecasts. I also suggest making polygons or symbols larger, since they look rather small compare to the entire graph. In this way, one colour defines whether the forecast is ESP or WG based and the polygon/symbol indicates type of forecast.

Figure 7: Please re-arrange order in the caption so as to present panels in alphabetical order, I believe this would make the reading easier. Also describe in the caption what is the black continuous line representing.

Figure 9: Colours described in the caption do not match the observed in the figure. Please correct.

Figure 10: I am not sure if is a resolution problem or type of file format, however colours are kind of washed out in this figure. It would be better to see it as the other figures.

Table 1: I would prefer to see the measurement units on the first column in between parenthesis.

Table 2: Same as table 1.

References:

P28.L25: Replace "Sum-mary" with "Summary"