Anonymous Referee #1

Summary

This paper analysis the impact of the drought in 2010 on the Caspian Sea (CS) level.
The main finding is that this drought is not caused by the low precipitation rates but rather by the high evaporation rates. This conclusion could be drawn by analyzing the travel time of the precipitation over the Volga Basin (VB) to the CS (which is 1 to 3 months) while the drop in CS level coincides with the drop in precipitation over the VB and an increase in evaporation over the CS.

General comments:

Several studies already investigated the CS level variability, yet according to the authors the novelty of this study lies in the improved data set used and its focus on smaller time-scales. And although it concerns a case-study focusing on a very specific region, the authors make a thorough analysis of the available data, focusing both on its quality and the inter-relationships between the different variables, I therefore think that the manuscript is of interest to HESS. The manuscript is well organized and provides a clear and short summary of the full analysis. Yet, the following points should be improved or clarified in a revised version.

- Were precipitation conditions comparable to normal for the months prior to the drought in 2010?

**As shown in Fig. 3 the precipitation over the VB was near normal in the months before June 2010

-- Section 3.1 describes the overall budget. Does water use have any influence on this budget? It is not included in this section.

yes it should be mentioned. P-E for the Volga basin might be reduced by irrigation along the river. This extra evaporation might however re-enter the budget by extra precipitation and it is not clear if that would be seen in the precipitation analysis. Without such a loss, P-E was already too small compared to the observed VRD

- Table 2 contains information on the delay in discharge. Is it possible to visualize this information in a clearer way, for example with correlograms or plots showing both precipitation and discharge maxima.

**Also reviewer2 suggests some changes here. There the following comments are given:
For that the easiest and also most convincing would be to compare mean annual cycles of P-E over the VB and the VRD. P-E has its maximum from October to February while the VRD has a maximum in May, so there is a clear delay of several months mainly due to storage on the ground by ice and snow.
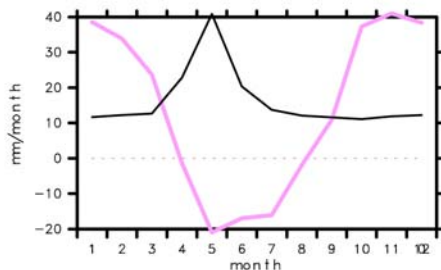

Table 2 concentrates on delays of anomalies during summer which is more relevant for this study and we could show all the plots used for this table.
The plot shown here is discussed without showing it and the plot containing the information of Table2 is added

- Section 3.3 is rather unstructured and it is hard to extract the main findings while reading. Please re-write and subdivide in paragraphs.

yes, the error estimate should be separated and some RMS values are given now

- Section5, conclusions, last line 7791, first line 7792: The data from different sources is said to be consistent. Does this also include the satellite data? As, in section 3.3 the quality of the satellite is said to be doubtful and therefore seems to be disturbing the analysis.

**I am not English speaking by birth and therefore I have a lack of feeling what "consistant" involves. One needs at least a general consistency between different data series before one starts to analyse periods where this consistency is disturbed

will ask a native

Minor coments:

- page 7785, line 10: remove "as well"

 OK

- page 7786, line 6: "changes over time" ?

OK? will ask a native

- page 7786, line 26: GPCC i.s.o. CPCC ?

OK

- page 7787, line 6: "can partly be"

OK

- page 7787, lin 14-16: "none of the budget components [: : :..] only by a small amount."

OK

Sentence unclear.

- Page 7792, line 9-12: Sentence unclear. The decreased CSL is "compensated" by increased evaporation?

OK, made it clearer

- Table 1: I assume that the unit "change of the Caspian Sea Level per year in cm" can not apply to all the variables in the table. Maybe replace change with anomaly from normal.

it means that each component on its own would change the CSL by this amount per year except "CSLchange" which is the observed mean change during that period. **To me this unit description looks right