REVIEWER#2

This is a good paper that is relatively straight-forward. I think the result about assimilating wet days vs precipitation amount is particularly useful. I only have a few suggestions for clarification and improving the presentation of the results.

We thank the Reviewer for his/her positive feedback and for the recommendations where to improve the manuscript.

l.89 Could you clarify that this is the traditional Gaspari-Cohn localization function with a specific cut-off length (i.e., it is zero beyond some specified distance)?

We implemented the Gaussian localization function as described by Gaspari and Cohn (1999), but without compact support. The elements of the localization functions are only getting close to zero, but were not set to exactly zero beyond a specified distance.

l.156-158 What's the justification for assimilating the observation types in this order? I would have guessed that one would assimilate the observations with the longest localization length first (i.e., pressure)?

We agree with the Reviewer that the order of assimilated observations can have an influence on the result. We kept the assimilation order as was used in previous reconstructions (Franke et al., 2017). However, further testing could reveal more optimal assimilation order.

l.172 Replace "Besides" with "In addition"

We have replaced it.

Discussion of Figs. 3 & 4 I found it difficult to assess some of the comparative statements made about these results based on the data present in the figures. The maps give an idea of what the data values are, but unless they are compared with something like box plots then it's hard to tell which option/experiment is better or best. For example, statements are made about one choice of localization length being better than another, but I couldn't tell if that was really the case given only the maps; the distributions of the data values need to be compared more quantitatively.

Thank you for the suggestion. We will add new figures as it is recommended.

Figs. S1 & S2 Can you label which columns are which months?

We will add additional labels to the figures.