

Authors' Responses to Reviewer 2 (RC2, anonymous)

Date: 16 March 2025

Title: Investigation of an extreme rainfall event during 8–12 December 2018 over central Viet Nam – Part 2: An evaluation of predictability using a time-lagged cloud-resolving ensemble system

Authors: C. C. Wang et al.

Firstly, we thank the reviewers for spending valuable time reviewing the paper again and giving us constructive comments that helps to improve the clarity of the paper.

These are our responses to reviewers:

Minor Comments (Comments are not listed in order of importance):

1. Line 51: Should this be figure 1, as opposed to figure 4?

Reply: We apologize for causing the confusion. At line 51, we do mean Fig. 4 (OBS) because we referred to the observed accumulated rainfall of the rainiest day (10 December), not the 3-day rainfall.

2. Lines 98-99: Remove “has become indispensable for its ability to” and change “simulate” to simulates.

Reply: Thank you for your suggestion. We have removed the mentioned words and corrected the sentence, as you suggested. **The change is shown on page 5, lines 84-85, in the marked-up manuscript version.**

3. Lines 106-111: Yes, generally over long periods the ensemble mean is more accurate. However, it should be noted that it will smooth out the precipitation field and likely not capture the extreme magnitude of events.

Reply: Thank you for your comment. We totally agree that while the ensemble mean generally improves overall accuracy, it may smooth out extreme events.

Therefore, we have clarified this limitation in the revised version. The change is shown on page 5, lines 96-97, in the marked-up manuscript version.

4. Lines 142-155: There is a scale dependence to the practical and intrinsic predictability as well. Likely worth noting in this section.

Reply: Thank you for your suggestion. We also totally agree that predictability is scale-dependent and have included this information in the revised version. Moreover, we have added some references as supporting evidence. The change is shown on page 6, lines 125-126, in the marked-up manuscript version.

5. Lines 156-189: Need to break this into smaller paragraphs. I suggest one at the end of line 172 and 179.

Reply: Thank you for your suggestion. We have split the mentioned paragraph into smaller ones, as you suggested. The change is shown on page 7, lines 152 and 159, in the marked-up manuscript version.

6. Line 256: I would remove the word “retrieval” when talking about the TIGGE data. This leads to some confusion in my opinion, as “retrieval” has connotations of a mathematical processing; not just getting the data.

Reply: Thank you for your suggestion. We have removed it, as you suggested. The change is shown on page 10, lines 231 and 234, in the marked-up manuscript version.

7. Section 2.3.1: If I am understanding the SSS correctly, it does not take into account neighborhoods when verifying the precipitation? This would be something to specify, if so. Further, using a verification method that allows for a precipitation object to be slightly off location but still have a similar shape would be a useful comparison. Fraction skill score could be an option.

Reply: Thank you for your comments/suggestion. You are right that the SSS does not account for neighborhoods in precipitation verification. We have clarified this in the revision. The change is shown on page 15, lines 307-309, in the marked-up manuscript version.

Additionally, we appreciate your suggestion regarding alternative verification methods, such as the Fraction Skill Score. However, we prefer to keep our current method using SSS because it is suited for QPF verifications where the rainfall location is important (as in our case).

8. Lines 392: “This is true for a well calibrated ensemble, only.” Does not seem to go here. I know this was a comment I had from the last round of revisions...but I am not sure why it got placed here.

Reply: Thank you for your comments. We sincerely apologize for misunderstanding your point. We have removed that sentence and revised the text in Section 2.3.2 to clarify your intended meaning. Besides, we also have added a reference as supporting evidence. **The change is shown on page 15, lines 314-316, and page 16, line 352 in the marked-up manuscript version.**