

We sincerely thank the editor and both referees for their time and effort in reviewing and accepting our manuscript. We have carefully addressed all comments and revised the manuscript accordingly. Our detailed responses are provided below and are highlighted in orange. For your convenience, we have also uploaded a track-changes version of the manuscript.

Review by Editor:

1) Editorial correction:

line 5: change to “the focus is on week 3-4 forecasts” or “the focus is on the week 3-4 forecast”

line 211: typo: “additionally”

line 384: correct: “Errors ... seems”

line 385: suggestion: “affect the representation”

We corrected the grammar errors as suggested.

2) It would be nice to slightly extend the discussion in the conclusions to better address the limitations of this study being based on case studies, which have specific characteristics, as clearly outlined in section 3.3.

Thanks for pointing out the missing discussion regarding the limitations of our study. We extended the discussion slightly in the conclusions (ll. 355-357; ll. 371-372) emphasizing that we focus only on tropical latitudes and two cases with specific characteristics.

Review by Yannick Peings:

1) Panels g-i in Fig.4 are not particularly useful because the most important here is that the reforecasts more closely match ERA5. Rather than showing NTR-CRL, I suggest you show where the error is diminished or reduced. You have the original error being CRL-ERA5, you now have a new error NTR-ERA5, these panels could show where the difference in errors (NTR-ERA5 minus CRL-ERA5) is reduced (say in green, or blue) and where it is increased (in red?). This would directly show the reader where nudging has led to improvement in the VP200 anomalies. Only a suggestion for consideration by the authors since the current figure is fine but could be more informative in my opinion.

Thanks for the nice suggestion to help better visualize the results. We have revised the figures in the manuscript as suggested.

2) Caption of Fig. 4 says the interval for VP200 from ERA5 is $6 \cdot 10^{-6} \text{ m}^2/\text{s}^{-1}$, but the contour labels suggest otherwise. Unless the contour labels are for the shading? Please make sure the contour intervals are correct here.

Thanks for pointing out this error. We have corrected the figure caption. The contour intervals are $-9, -3, 3, 9 \cdot 10^{-6} \text{ m}^2 \text{ s}^{-1}$.

3) Panels g-i in Fig. 7, same comment as for Fig. 4.

We have changed the figure as suggested in 1).

4) Section 2.2.2: in Annex, I recommend that you show the equivalent of Fig. 2c,f,i, but for the

experiments with fixed SST/SIC from initial conditions, to demonstrate that prescribing observed SST/SIC does not impact forecast skill significantly.

Thanks for the advice, we have added a figure showing the replay run for experiments with fixed SST/SIC in Appendix Fig. A1 and refer to it in Section 2.2.2.

5) Section 2.2.3: say a word about the treatment of SST and SIC in Pangu-Weather (they are not included in the set of fields that are only atmospheric fields).

We have included a corresponding statement in Section 2.2.3. It now reads "As Pangu-Weather is only based on atmospheric fields, SST and sea ice concentration are not accounted for."

6) l. 268, a space is missing ("thatPeings") and there are two dots after "et al"
and l. 295, a space is missing before the parenthese (after "onwards")

Thanks for pointing out the typos. We corrected the manuscript accordingly.