

Reviewer #1

In general:

The author would like to thank the reviewer for the thorough examination and comments on this manuscript.

The following is the point-by-point reply to the comments:

Specific comments:

1, In the revised Figure 15, the Ps RMSE of CESM-ECDA is smaller than 20CRv2 but is larger than 20CRv3 (Line 569-571), so it is not fair to state that Ps RMSE is smaller than 20CR. Several statements relevant to this point has not been updated yet.

a. L29-30. “Results show that Ps RMSE is smaller than 20CR and SST RMSE is better ERA-20C and close to CFSR.” I would suggest removing this statement from the abstract.

RE: The statement has been removed. Thanks!

b. L604-605. “Furthermore, the reanalysis experiment with real observations shows that the Ps RMSE of CESM-ECDA is smaller than 20CR if we take ERA-interim as truth.”

RE: The statement has been updated. Please see **Lines 603-604. Thanks to point out!**

2. The two references (Slivinski et al. 2019; Yang et al. 2021) were not added in the reference list.

RE: These two references have been added in the reference list. Please see **Lines 799-801 and Lines 819-821. Thank you very much!**