

A point-by-point response to the Topical Editor:

Comments to the author:

Although two reviewers have suggested minor revisions, I strongly suggest that the authors should briefly explain the larger SST RMSE of WRF-SOM forecast initialized in July.

RE: Thanks for your good comments and suggestions. We have explained the reason for the large SST errors in July. Please see lines 145-147 and 203-206.

Also, please discuss the associated impact on the typhoon forecasts in July. Currently, only cases from August to October were chosen.

RE: Thanks for your advice. Since there is no typhoon observed in the north-west Pacific in July 2020, we can not do the relevant analysis. We do believe these SST errors in the region could have effect on the typhoon activities and we will expand the experiments to explore its impact in the further work. Please see lines 280-283.

Some minor comments:

Line 152: please remove "local"

RE: Thanks for your good suggestions. We have removed the word. Please see line 155.

Line 240: please cite proper references to indicate the potential sources for the cold biases.

RE: Thanks for your suggestions. We have added the proper references in the paper. Please see lines 237-238 and 414-420.

A point-by-point response to the review 1:

Most of my previous comments have been addressed in the revised version. I only have the following minor comment in this round of review.

The effect of sea ice is important on the SST predictions during the extended period which did not include in this study. I suggest more discussion or speculation on this issue in the paper. I also encourage authors deeply study the impact of sea-ice parameterization in the SOM in future work.

RE: Thank you for your suggestions. We have added the discussion on sea-ice and emphasized the importance of sea-ice in the follow-up work. Please see lines 208-210.

A point-by-point response to the review 2:

Only a few minor comments

L147: The boundary condition of the forecast is interpolated from the CFSv2 forecast data set.

So both system uses the same CFSv2 forecasts as boundary conditions?

RE:Yes. Both systems use the same boundary conditions from CFSv2 forecast.

L289: 3-D dynamical ocean model inevitably introduces “unnecessary” biases ...

Suggest to rephrase. I would not say unnecessary biases.

RE:Thank you for your suggestions. We have rephrased this sentence. Please see line 286.

L293: ... can manage with the “easier” errors than 3-D dynamic ...

Not sure what easier mean, please rephrase

RE:Thank you for your suggestions. We have rephrased this sentence. Please see line 290.

L306: .. by local dynamics processes (...)

Suggest to add "Ekman pumping"

RE: Thank you for your suggestions. We have add "Ekman pumping" in the dynamic processes. Please see line 304.