Comment on gmd-2021-235

Anonymous Referee #2

Referee comment on "Improvements in the regional South China Sea Operational
Oceanography Forecasting System (SCSOFSv2)" by Xueming Zhu et al., Geosci. Model
Dev. Discuss., https://doi.org/10.5194/gmd-2021-235-RC2, 2021

The authors describe the evolution of the South China Sea operational oceanography
forecasting system (SCSOFS), which significantly improve the quality of the system. The
manuscript provides a detailed description of different versions of the ROMS model which
were used for SCSOFSv1 and SCSOFSv2 and compare the 11-year long free run of both
models. The results show various improvements for the changes that have been made to
the operational system. It provides useful suggestions for the community. My opinion is
that the paper is worthy of publication in GMD after minor modifications. But several
specific aspects of the paper detail and analysis should be considered first.

Specific comments:

The grammar and quality of the writing needs to be improved before publication: many
sentences are over-complicated or confusing (Example lines: 113-114, 170-174,
341-343....). It would benefit from a thorough revision by someone with proficient written
English skills.

Line 99: the section title is not clear, which datasets? Not all datasets used in the article
are described here.

Line 142: For what reasons are the initial conditions not deduced from soda 3.3 in correspondence with the boundary conditions?

Lines 180-184: Why does the inclusion of Guam at the open boundary have such a significant influence on the latitude of the NEC in the model? This need be explored or explained.

Lines 189-193: Why these choices as opposed to the ones used in v1? What is special about 3rd order and biharmonic?

Line 227: Any reference for OSTIA first appeared in the text? Is it provided to SCSOFS directly by the Metoffice or by other means?

Line 326: the sentence on the conclusion may come after the lines 327-337.

Line 355: Where do you get the data from in SCSOFSv2, is it still the same servers? Where do the ARGO observations come from?

Line 373: "around" is not an exact annotation, need to point out exactly.
Line 383: "for the calculation of innovations" change to "when calculating innovations"

Line 385: Lee et al., 22-25 Jun, format error!

Line 619: What are the known biases of the system? Some are described in the article; can you summarize them in the conclusion? Can you elaborate the summary in terms of what is the added value of this regional system compared to existing global systems?

Section 2: A table summarizing the v2 and v1 features would be useful.
Fig. 8: Why 7-day FGAT? Why not 3-days or 10-days? Can you explain more on this?