

Geosci. Model Dev. Discuss., referee comment RC3
<https://doi.org/10.5194/gmd-2022-7-RC3>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Reply on RC1

Anonymous Referee #3

Referee comment on "The Regional Coupled Suite (RCS-IND1): application of a flexible regional coupled modelling framework to the Indian region at kilometre scale" by Juan Manuel Castillo et al., Geosci. Model Dev. Discuss.,
<https://doi.org/10.5194/gmd-2022-7-RC3>, 2022

Review of the paper "The Regional Coupled Suite (RCS-IND1): application of a flexible regional coupled modelling framework to the Indian region at km scale"

General Comments

In the paper entitled "*The Regional Coupled Suite (RCS-IND1): application of a flexible regional coupled modelling framework to the Indian region at km scale*" by Castillo et al., the Authors introduces and describes a new high resolution coupled modeling tool for the Indian region. Using different modeling configurations its performances are investigated using two case studies related to tropical cyclone activity in area. The manuscript is well written and clear and I suggest its publication after some minor revisions.

Specific comment

Line 46-56: I would move this part at the end of the introduction.

Line 85- Chlorophyll-a

Line 113 where, required,..

Line 123-125 I do not understand very well this statement. Do you mean that Jules behaves as a library of the UM? Please explain better

Section 2.1, section 2.3 and section 2.4 : I would merge these sections in just one. In this way a potential Reader would not need to jump from section 2.1 to section 2.3 to get information about the vertical resolution of the ocean model NEMO (as I did)

Fig.1 the two colorbars share some colors (for example the blue). This could lead to some confusion in reading the Figure 1. I would suggest to redraw the figure 1 with different colorbars.

Line 276 What do you mean with "multi-annual"...please specify.

Figure 3-4 Maybe using °C would make the maps and graphs more readable. I would also use different markers and colors for the location of the buoys. Did you test if the differences observed in the maps are statistically significant or not? This question holds also for other figures where you compare observations and simulated fields.

Line 465-466. Could you please describe better how you detect and track tropical cyclone.

I find really interesting the discussion and conclusions paragraph. Probably I missed the point but I do not understand if there exists a better configuration with respect to other tested in your experiments or which is able to balance different factors such as biases, computational time... Could you please infer a little bit more about?