ANSWERS TO TOPICAL EDITOR

In order to have the same title with the companion paper (Gutknecht et al., 2016), we slightly change the title:

Evaluation of an operational ocean model (NEMO2.3) configuration at 1/12° spatial resolution for the Indonesian seas (INDO12). Part I: ocean physics

change for

Evaluation of an operational ocean model configuration at 1/12° spatial resolution for the Indonesian seas (NEMO2.3/INDO12). Part I: ocean physics

Major comments:

Code and Data Availability:

Here data refers to any information that is required to either fully appreciate or reproduce the results presented in the manuscript. So you also have to describe how one can get access to the configuration files (e.g. bathymetry, forcing fields) needed to reproduce your runs. The data should preferably be available from an archive with a digital object identifier (DOI) but suitable repositories can be found at the Registry of Research Data Repositories. Although not recommended, and authors will typically be requested to improve on this, it is also possible to provide the code and/or data only upon request via a given point of contact. If the authors cannot or do not wish to make the code and/or data public (e.g. copyright or licensing restrictions), the reasons must be clearly stated.

Author's response:

As suggested, we changed/modified the contain of this part:

The INDO12 configuration is based on the NEMO2.3 version developed at Mercator Ocean. All specificities included in the NEMO code version 2.3 are now freely available in the recent version NEMO 3.6, see the NEMO web site http://www.nemo-ocean.eu.

The INDO12/NEMO2.3 configuration and all the input files used in the present paper are available upon request (please contact benoit.tranchant@cls.fr).

World Ocean Database and World Ocean Atlas are available at https://www.nodc.noaa.gov. Aquarius data L3 (V3.0) data are available at http://podaac.jpl.nasa.gov/dataaccess. AMSR data are produced by Remote Sensing Systems and sponsored by the NASA Earth Science MEaSUREs DISCOVER Project and the NASA AMSR-E Science Team. Data are available at www.remss.com. JAMSTEC data are available at http://www.jamstec.go.jp/ ARGO/argo_web/prod/oi_prs_e.html

Comments from Referee #1:

- **1st comment**

You write “A sentence has been added in the introduction in order to show the benefit of

having such regional configuration to feed the global model. We also precise the main differences between the 1/12° operational model (PSY4) and INDO12.” I cannot find this addition. The arguments presented in your answer should be included in the text.

Author's response:

It was an oversight.
We added 3 sentences in the introduction, see page3, lines 7-13. We added one sentence, page 7, lines 14-16 and also modified one sentence p8, lines 11-16.

- **2nd comment**

Your argumentation is convincing and few sentences should be added in the text on this issue.

Author's response:

Two sentences have been added in the summary part (p28 lines 19-23) and also p25 (lines 24-26)

- **5th comment**

Reading through the text, the grammar seems better now but this is typically something difficult to evaluate without the "track mode" version of the new manuscript.

Author's response:

For clarity, the track mode version (original manuscript version compared to the second revised manuscript) has been added at the end of this document.

Comments from referee

P.17 lines 10-29 & p. 18 lines 1-3: this whole paragraph needs to be reviewed. Despite Referee #2 comment, I cannot understand how greater ITF can be associated to a 2007-2008 La Nina.

Author's response:

This whole paragraph has been reviewed. In fact, we think that the discrepancy between INSTANT estimates and INDO12 can be attributed to (i) the different period, (ii) the ocean forcing fields (PSY3V3R3) and (iii) the bathymetry, see page 17 lines 26-28 and p18 lines 1-2.

We only give a focus on the INDO12 simulation and argue for the competing ENSO/IOD events to explain the inter-annual differences.

Comments from referee

p.18 lines 27-28 and p.19 lines 1-2: these two sentences are redundant and partly contradictory. Are Timor INDO12 values stronger than INSTANT or do they "compare favorably"?

Author's response:

For clarity, we changes the whole paragraph, see page 19, lines 4-8.

Minor comments:

All minor comments have been taken into account, see the "track mode" version of the manuscript.

Referee comments:
p.9 change "wet tropospheric component, high-frequency oceanographic signals" for " wet tropospheric component high-frequency oceanographic signals" without the comma !!

Author's response:

P9-10. For clarity, the sentence have been split. Note that there is a comma like in the paper of Saraceno et al., 2008. Actually, the high-frequency oceanographic signals refer to internal waves. See Page 10, lines 5-8.

Referee comments:
p.18, line 20: I do not understand what "(no occurence during 2008-2013)" refers to.

Author's response:

The event refers to a solo La Niña event. (p18, line 24)
P18, line 27: For clarity, the following sentence has been added.
Note that during the INDO12 simulation (2008-2013), there was no such event.