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MARALDI Claire
SHOM
42 avenue Gaspard Coriolis
31100 Toulouse, France
E-mail: claire.maraldi@gmail.fr

Revised version of the Paper
NEMO on the shelf:
assessment of the Iberia – Biscay – Ireland configuration.
No osd-10-83-2013

BY C. MARALDI, J. CHANUT, B. LEVIER, N. AYOUB, P. DE MEY, F. LYARD, G. REFFRAY,
S. CAILLEAU, M. DREVILLON, E. A. FANJUL, M. GARCIA SOTILLO, P. MARSALEIX
AND THE MERCATOR RESEARCH AND DEVELOPMENT TEAM

Dear Editor,

We sincerely thank all the reviewers for their review of our paper. The aim of this letter is to detail how we addressed their comments on our manuscript No osd-10-83-2013 untitled NEMO on the shelf: assessment of the Iberia-Biscay-Ireland configuration.

ANSWERS TO REVIEWER #2

- General comment. “[...] There may be a bit of tightening of the sentences needed where some appear vague and may require inside knowledge of the My Ocean program and this project to fully understand the meaning. Clarifications are suggested below.”. *We thank the reviewer for the detailed suggestions (below). Each comment is answered separately.*
- Comment P85 L5-6: “The increasing number of users over this region demands that good estimates and forecasts of marine variables are available in order to support the development of these activities.” Comment: This sentence is confusing. Are we referring to the users of the ocean demanding these forecasts, or are we referring to with so many “competing” users in one location, availability of the ocean forecasts allows these uses to better co-exist together and be more

efficient. *We are sorry about the confusion. We meant the former sense. We suggest replacing that sentence with the following: “The availability of validated estimates and forecasts of marine variables in this coastal region is expected to accompany the current development of user-driven activities and applications”.*

- Comment P86 L20: " This is clearly not research, since not much new is learned about the ocean itself, but is an essential task adopting a scientific methodology". Comment: Better to focus on what this paper is rather than what it is not Suggestion: This is applied research that develops a scientific framework and methodology for improving ocean model configurations at the development stage for use in basic research or operations. *We thank the reviewer for this comment. The original sentence had been added following the previous review process where it was not clear to reviewers that the manuscript essentially focussed on scientific methodology rather than on physical processes. However we admit that the sentence has to be reformulated to better focus on what the paper is. The initial sentence of the manuscript has been replaced by the reviewer suggestion.*
- Comment P86 L23: " Part of the approach adopted in this paper is inspired by past work (e.g. Holt and James, 2001; Holt et al., 2001, 2005; Sotillo et al., 2007), and part follows the specific needs of this work or the availability of data. ". Comment: Disjointed sentence and meaning Suggestion: This paper's approach is inspired partly by (Holt and James, 2001; Holt et al., 2001, 2005; Sotillo et al., 2007), partly by the needs of this project, and partly by available observational data for this project. *The sentence has been reworded following the reviewer's suggestion in order to avoid any ambiguity.*
- Comment P87 L1: "For MyOcean-related reasons, we concentrate on the year 2008." Comment: this is a bit vague in justification. Suggestion: To better collaborate and meet My Ocean objectives, we focus on evaluating the model configuration during calendar year 2008. *We thank the reviewer for the proposition of this more precise sentence which has replaced the previous sentence in the manuscript.*
- Comment P88 L21: "The slopes of $z_{\text{}}$ surfaces remain however small so that the procedure does not give rise to significant errors, and in any case, much lower than with terrain following coordinates." Comment: Authors are comparing apples with oranges (slopes and coordinates). . . Suggestion: The use of z^* coordinates reduces computational error significantly compared to terrain following coordinates with z^* surfaces having very faint slopes. *The sentence has been rewritten following the reviewer suggestion. Moreover a reference focusing on these aspects has been added (Marsaleix et al., 2009).*
- Comment P89 Line 5 "A part from these, other parameters as well as model equations strictly follow those of Warner et al. (2005) and will not be repeated here." Comment: 1) You may want to reword the sentence and put it at the beginning of the paragraph. There are too many ideas in this sentence. I think the idea is that: The model turbulent mixing scheme uses parameterisation and equations from Warner et al. (2005) unless mentioned explicitly here. 2) Furthermore, the next sentence although related to vertical turbulence, talks about boundary conditions and it should start a new paragraph. *As suggested by the reviewer, 1) the paragraph now start with the following sentence: “The model turbulent mixing scheme uses parameterisation and equations from Warner et al. (2005) unless mentioned explicitly here”, 2) the description concerning boundary conditions is now part of a new separated paragraph.*
- Comment P94: L 23 At 33 major rivers mouths (shown in Fig. 2a), climatological monthly flowrates are prescribed." Suggestion: Change order of sentence.

“Climatological monthly flow-rates are prescribed for 33 river mouth locations”.
The sentence has been rewritten following the reviewer suggestion.

We are confident that our corrections will address all of the suggestions made by the reviewers. We look forward to hearing from you soon.

Yours Sincerely,

C. MARALDI, J. CHANUT, B. LEVIER, N. AYOUB, P. DE MEY, F. LYARD, G. REFFRAY,
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