Ocean Science
Discussions
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Interactive comment on "Investigation of suitable sites for Wave Energy Converters around Sicily (Italy)" *by* C. Iuppa et al.

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The Authors would like to thank the reviewer #2 for his useful suggestions, which contribute to improve the overall quality of the manuscript.

English writing

1) The English writing is very rough. For the most part I can understand the meaning, but the phrasing is distracting. I would recommend a deep editorial revision to be made by a native English speaker before it is re-submitted.

The Authors ensure that the final version of the manuscript will be reviewed by a native English speaking scientist.

C149

2) There is a substantial lack of informations about the model setting.

The information about the model will be presented in a new clear way.

Bathymetry

3) It is not clear to me which methods was used to merge the two bathymetric database. It would be necessary also to show the final bathymetry used in this study.

The bathymetry up to a depth of 100 m was extracted from the Italian Navy Hydrographic Institute (NHI), while the bathymetric data for areas deeper than 100 m were extracted from the General Bathymetric Chart of Oceans (GEBCO). The NHI bathymetric data are provided on maps as isolines which have been appropriately digitized. The GEBCO data are provided on a grid with a resolution approximately of 1 km. Such GEBCO data were converted into isolines as well and then merged with NHI data.

According to the Reviewer's query, the final bathymetry used in this study will be shown.

Grid size along the boundaries

4) As for the bathymetry, it would be good to show, at least in same places of the domain, the model grid. More in general, what is the ratio between the grid size along the boundaries and the distance between two ECMWF consecutive input data? How the ratio has been chosen? What is the impact of the ratio on the obtained results?

The grid resolution has been assumed constant for the depths less than 50 m and greater than 100 m, while it varies linearly in range 50 to 100 m. Accordingly, the mesh size: is 400m for the depths less than 50; is 1000 m for the depths grater then 100 m; varies linearly between 400 m to 1000 m for the depths in the range 50 to 100 m.

The ratio between the distance of two consecutive ECMWF input point and the grid size along the boundaries is approximately 36. Thus, between two ECMWF consecutive input data there are approximately 36 grid nodes. The authors have estimated on tests effected in other studies that the use of such spatial resolution is adequate for the

appropriate reproduction of the wave input data.

According to the Reviewer's query, the model grid used in the present study will be shown.

Title of paragraph 2

5) I suggest to change the title of paragraph 2 from "Wave propagation" in "Numerical simulation and validation".

According to the Reviewer's query, the title of paragraph 2 has been modified in "Numerical simulation and validation".

Paragraph "Setting up the computation grid"

6) I must confess that this paragraph "Setting up the computation grid" is not clearly depicted. For example the sentence: "The computational domain was defined in terms of the ECMWF grid points" should be rephrased. More in general, the entire paragraph should be deeply revised. Moreover, from the paragraph it is not clearly indicated how the simulation was performed. I guess the authors propagate only some sea-states. If this is the case, the authors should indicate it clearly in the manuscript.

The paragraph "Setting up the computation grid" has been rewritten according to the suggestions of the referee.

The time simulation, as indicated at line 23 page 325, covers the period between 1-1-1999 and 31-12-2012; each sea states in this range was propagated.

Paragraph "Validation of the output data"

7) As for the previous paragraph, a substantial revision is needed for the paragraph "Validation of the output data". It is not clear to me why the authors did not compare the model simulation against buoys data. Such a comparison would be good to show the potential improvement of the SWAN simulation. Moreover, such a comparison allow the authors to compare also the propagation direction.

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The paragraph "Validation of the output data" has been rewritten according to the suggestions of the referee.

The comparison between buoys data and SWAN data was not performed because the buoys are located near the boundary of the computational domain (Capo Gallo and Mazara del Vallo) or in deep water (Catania). Hence, at the buoys locations, SWAN data are similar to those of ECMWF input data.