Ocean Science
Discussions

Interactive comment on "Characteristics of high monsoon wind-waves observed at multiple stations in the eastern Arabian Sea" *by* M. M. Amrutha and V. Sanil Kumar

Anonymous Referee #2

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The paper analyses wave measurements for one month at four locations in the Arabian Sea. From scattered sentences in the introduction and concluding remarks, I can understand the objective of this paper might be to study the occurrence of high waves in the Arabian Sea and its implications for the ocean engineering community, but this is not really what is presented in the paper. Methodology and results are not clear, nor the part related to observations and even less the wave modelling part. The paper does not hold together. Wave observations cover a too short time period, the wave modelling part of the study is a merely one month validation. I do not see any scientific conclusions that can be drawn from the presented data and methods. I recommend to reject it.

Abstract

- One-month period is too short for drawing any conclusions.

- How do we know this is a typical Indian summer monsoon?

- I would expect to have in the abstract the main objectives and the significant results. In the present form, I do not understand the significance on the numbers given here.

1 Introduction

I would expect in the Introduction to have a list of previous studies addressing the scientific issue presented in this paper and a statement clarifying how the authors are advancing in the field. The list of wave models with their references is meaningless for this study, it is not the state-of-the-art this paper would need (and you do not discuss why you chose one model instead of another one).

2 Data and methods

page 4 line 1-13: The need of using a wave numerical model in this work is obscure.

page 4 line 14-22: It is not clear the aim for presenting the empirical relations between Hs and wind speed here.

3 Results

Results are hard to read and it is difficult to capture the most relevant points.

page 4 line 27: You did not explain how you separated swell and wind-sea waves. In Fig. 2 it is not clear where is "History of significant wave height for wind-sea and swell are also present" (as written in the label).

page 5 line 4: This sentence is not clear.

page 5 line 7-13: During the one-month period of data, there is a storm and the Hs maximum values observed are recorded during this storm. Are such storms typical during the monsoon season? What's the return period/probability of occurrence of this Hs value in the region? I found these numbers meaningless without a context.

page 5 line 29 to page 6 line 11: The focus is now on freak waves. Am I right in understanding that no freak waves were recorded during the one-month period of time? Has this any significance?

page 6 line 12: Why talking about wind forcing in wave model simulations here?

page 6 line17: It is not clear how the authors know the measured waves are mainly swell. It not clear the meaning of wind-wave coupling and how the reader can understand it is strong.

page 8 line 6-14: You have set up a wave model for the area of interest and compared with observation for a very limited time period. Nowadays, this is not worth publications in any scientific journal. It would have made sense to present the wave model setup and its validation, if then you were going to use it for a specific purpose. Numerical models are helpful to complement observations, for example if observations are scattered in space or limited in time. It is missing what the authors want to study with the model they have validated. Extending the time period and the spatial domain of observations could be an idea.

4 Conclusions

It is given as a statement, but it is not clear how the scientific and ocean engineering communities can benefit from the results presented in this paper.