

## ***Interactive comment on “Safe-economical route and its assessment model of a ship to avoid tropical cyclones using dynamic forecast environment” by L. C. Wu et al.***

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Dear Referee 2, Thanks very much for your comments and suggestion which are help to improve our manuscript. The reply to the comment and suggestion are listed as following:

Comment 1: About the forecast errors of wave period should be considered in the model.

Yes, it will be better and improve the accurate of the model if the wave period forecast errors are considered in the model according to their distribution. But there are some

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reasons why we don't take the wave period errors into the model. (1) Measurements of the wave period are little, and most of them are from the buoy data near the shore, especially in the SCS. So it is hard to conclude the distribution of the wave period forecast errors of wave models using the limited data. According to the published papers about the wave period forecast errors of the WWIII, there are only few paper related about it. In other hand, we can not get the buoys data to statics the wave period error distribution. According to the statics of Zhou et al. (2012) about the AE and RE, and the statics of Liu et al. (2012) in different buoys, the results are different. But the WWIII results are all underestimate the wave period. If there are no enough measurements in about the wave period in SCS, it is hard to get error distribution.

(2) According to the research of Gu and Miao (2005), under the same SWH, the smaller the period of waves, the higher the capsizing probability. In other ways, if using the results of wave period directly, it will overestimate the ship capsizing probability. In the navigation practice, it is acceptable because it avoid the high risk area far away.

Considering the above conditions, we don't take the forecast errors of wave period in the model. We have explain about these in the manuscript. The errors of wave period can be considered in the model as the SWH when the distribution are got with the increasing measurements.

Comment 2: I would merge section 1 and 2. I would also state much more clearly the aim of this research based on the literature review.

Thanks for your suggestions. We have revised the manuscript according to your suggestions. Please see the detail of the revised version.

Comment 3: Page 1861, sentence starting at line 6 is not clear.

We are sorry for our unclean expression. We have revised it. It means that Quantification of ship's risk under heavy weather conditions is an important aspect for weather routing. The quantification ship's risk is also a very complex issue.

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Comment 4: Page 1873, line 6: what is the meaning of 281 000

It means 12:00 on 28 July. It is an expression in navigation practice. We have changed it into the normal expression.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/1/C1713/2013/nhessd-1-C1713-2013-supplement.pdf>

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