We would like to thank Dr. Bruns for his valuable comments on the manuscript. While we agree with most of the comments, we think that the ERA-20C data should be appropriate for us to conduct this study.

We are not a state member of ECMWF and therefore it is difficult for us to acquire the operational WAM model data run by the ECMWF, as the example shown by the referee. Considering that we investigated impacts of both windsea and swell on ship accidents occurring in a period of ten years, and ERA-20C publicly provides both the "partitioned" windsea and swell parameters for a long period, we decided to use such dataset.

When one downloads the ERA-20C dataset, data with various spatial resolution (from the lowest 3° by 3° to the highest 0.125° by 0.125°) are available. We used the ERA-20C data with the highest resolution of 0.125° by 0.125° for this study. Fig.S1 in the supplementary shows the screenshot of the data downloading interface (at http://apps.ecmwf.int/datasets/data/era20c-wave-daily/type=an/)

Although the ERA-20C data that we used in this study has a good spatial resolution, it may have bias in some special cases, as in the case shown in our manuscript. In the following, we presented a further detailed analysis for the first case, i.e. the Chicago Express accident case occurred on Sep.23, 2008.

In the preparation of the manuscript, we just found it's an interesting case as this is a typical cross sea situation, whereas we didn't recall this one was actually a very complicated ship accident case, not only high winds and waves but also possible parametric rolling occurred due to the severe weather induced by the typhoon "Hagupit".

As recommended by the referee, time series of sea state parameters are depicted for a clearly discussion (see in Fig.S2 in the supplementary). Indeed, distinct bias exists on the other parameters from ERA-20C data, particularly SWH of the windsea (which of course leads to bias of SWH of total sea) comparing to the operational WAM model data (seen from the figure provided by the referee).

Meanwhile, we also further validated the ERA-20C results of this case by comparing with radar altimeter measurements. The ENVISAT RA-2 measurements were available between 13:40 -14:00 in the vicinity of the accidents on August 23. The RA-2 shows that the SWH was higher than 7 meters in the open sea of Hong Kong, whereas the ERA-20C model data only yields SWH of approximated 4-5 meters.

By comparing the ERA-20C model sea surface wind data with the Scatterometer measurements, we found that the ERA-20C underestimated the sea surface wind, as

shown in Fig. S4, and it didn't depict well the center of the typhoon. At 12:00 UTC on August 23, the highest sea surface wind speed of ERA-20C in the Hong Kong open sea was only approximately 20 m/s (Fig.S4(a)), whereas the ASCAT measurement shows that the sea surface wind speed was higher than 25 m/s in the typhoon center (Fig.S4(b)). Although the temporal interval between the ERA-20C and the ASCAT measurement is about one and half hour, the comparison suggests that the ERA-20C didn't depict well the weather situation during this typhoon process. As the sea surface wind speed is significantly underestimated in ERA-20C, it is not strange that wave height of windsea is consequently underestimated.

Above the general situation of this typhoon case is presented. A detailed analysis of this Chicago express ship accident actually is published by the Bundesstelle fuer Seeunfalluntersuchung (Federal Bureau of Maritime Casualty Investigation, Germany). The document is titled "Fatal accident on onboard the CMV CHICAGO EXPRESS during Typhoon "HAGUPIT" on 24 September 2008 off the coast of Hong Kong". In this document, a detailed analysis of sea state compiled by the experts (perhaps by Dr. Bruns and his team) from the DWD (Deutsche Wetterdienst) is presented. One can find this document in: http://www.bsu-bund.de/EN/Publications/Unfallberichte/_functions/unfallberichte_table_2009.html.

Overall, given that the special situation of the typhoon Hagupit leads to this ship accident, this case is not an appropriate one for discussion in this paper. A better one has been selected for the further study, which will be presented in the revision of this manuscript. Meanwhile, we are working on the validation of ERA-20C data by comparing with radar altimeter measurements for the selected cases.

This short response is compiled by Dr. Xiao-Ming Li and Ms. Zhiwei Zhang for further open discussion. A point-by-point response to the referees' comments will be provided in the revision. We would like to thank Dr. Bruns again for pointing out that the inappropriate case analysis.

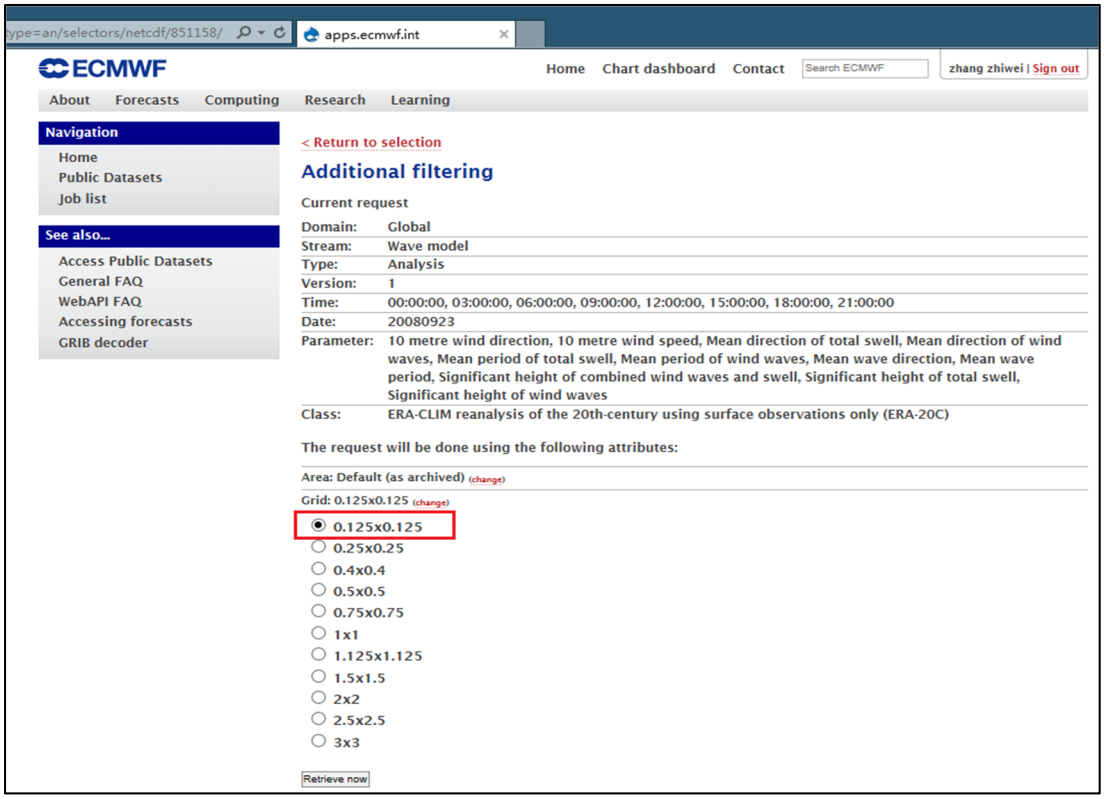


Fig.S1 The download interface of ERA-20C data

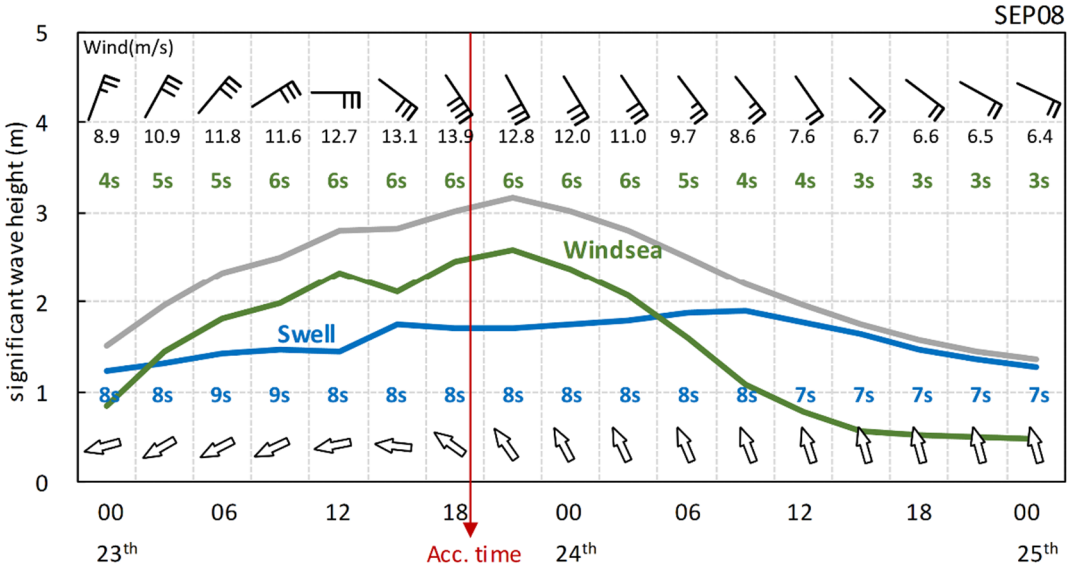


Fig.S2 Time series of ERA-20C model data (grey line: SWH of total sea; green line: SWH of wind sea; blue line: SWH of swell) for the Chicago Express case occurred on Aug.23,2008.

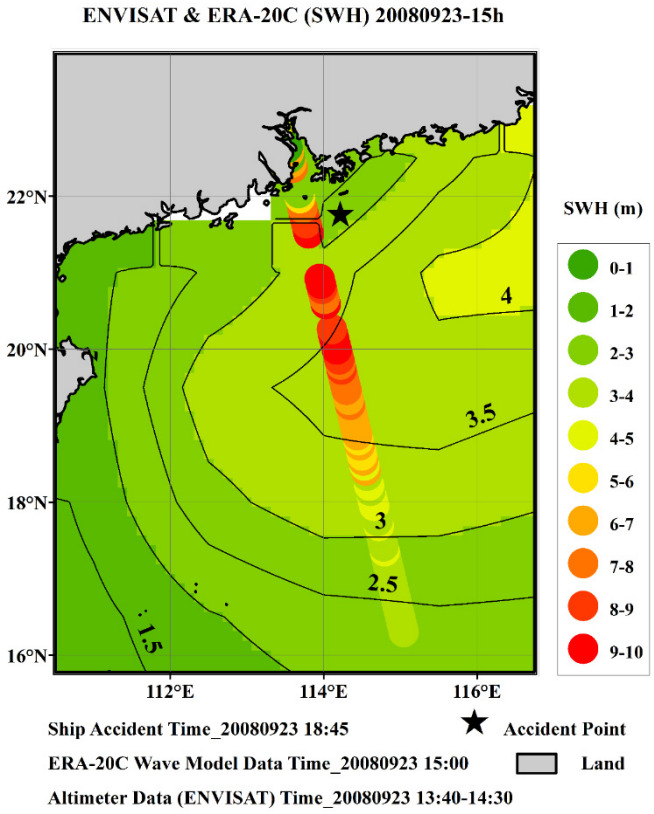
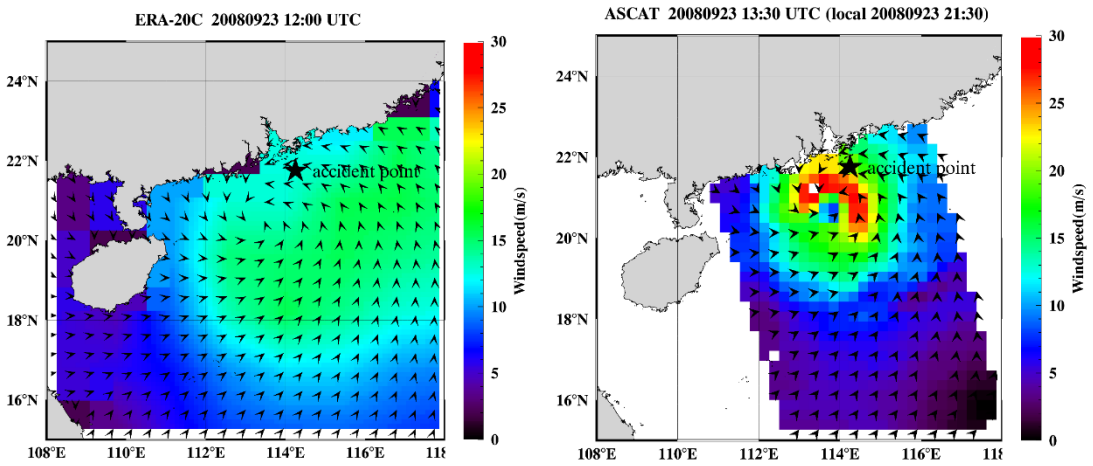


Fig.S3 Comparison of ERA-20C SWH (background) with the ENVISAT-R2 measurements (the overlaid dots) during the typhoon Hagupit pass. The RA-2 measurements are at 13:40-14:00 and the ERA-20C data are at 15:00 UTC.



(a)

(b)

Fig.4 Comparison the ERA-20C sea surface wind field (a) with the ASCAT measurement (b) during the typhoon Hagupit pass. The ERA-20C model data are at 12:00 UTC and the ASCAT measurements are at 13:30 UTC.