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Comment on nhess-2022-215

Anonymous Referee #1

Referee comment on "Freak wave events in 2005-2021: statistics and analysis of favourable wave and wind conditions" by Ekaterina Didenkulova et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2022-215-RC1>, 2022

The manuscript gathers every known freak waves events which happened between 2005 and 2021. First, the statistical aspects are analysed, indicating the number of events per year, their location, and their distribution as "deep, shallow, or coastal events". An analysis in terms of damages is also presented. In the following section, an analysis, based on the reanalysis of ERA5 waves and atmospheric data is performed. The purpose is to provide new insights with respect to the freak waves characteristics, and the likelihood of the modulational instability to generate them.

Globally, the manuscript is well structured and well written. The analysis is partially new, and the results are certainly worth of publication.

I only have some minor concerns, with respect to some misleading wordings, or data analysis procedures which weren't fully clear to me.

- The denomination of deep/shallow/coastal freak waves is a little bit misleading. Indeed, the classification is only based on the location of the rogue wave (whether it happened in waters of depth greater or smaller than 50m). This denomination is a little misleading, since it has no direct connection to the classical kh (dispersive) parameter. Maybe using "deep area" and "shallow area", or something similar, would facilitate comprehension of the reader.
- The beginning of section 3 would probably benefit from a more detailed description of the ERA5 data, and their processing. For example, I could not understand how the values of H_{fr} are obtained (Although it is pretty clear for H_s). The same remark can be made for the values of the gustiness. Yet, the findings in figures 7 to 12 are pretty good.

In conclusion, I would recommend this manuscript for publication in Natural Hazards and Earth System Sciences. But I would also recommend the authors to modify slightly their manuscript to provide clarifications.