

## ***Interactive comment on “A Statistical Analysis of Rogue Waves in the Southern North Sea” by Ina Teutsch et al.***

**Ina Teutsch et al.**

ralf.weisse@hzg.de

Received and published: 22 June 2020

We thank Referee #1 for the constructive comments that have helped us to clarify and improve some points in our manuscript. In the following, we show how we will address the individual issues raised by the reviewer in the revised manuscript.

1. We thank the reviewer for this comment, which we believe addresses an important point. The comment suggests that the different statistics may also be the result of different sampling frequencies of buoys and radars. To address this point we will subsample statistics from a radar time series with a frequency of 1 Hz (close to the buoy frequency), compare them with statistics obtained from the entire time series and we will add a corresponding discussion in the manuscript.

C1

2. We agree with the reviewer that the information on spectral properties available from buoy measurements and hindcast data represent important and interesting aspects. We think, however, that this would be beyond the scope of the present manuscript. As suggested by the reviewer we would leave this for investigation in a follow-up paper.
3. We thank the reviewer for raising this important issue. We agree and will include typical kh ranges in Table 1. We will also include depth conditions in the discussion when comparing our data with results from previous studies.
4. We thank the reviewer for suggesting further references and will consider and include them in the revised manuscript.
5. We acknowledge that different literature provides different results and conclusions. We did not explicitly test whether the different approaches lead to different results for our data but chose one of the definitions. We will, however, include a corresponding discussion of the different views and results in the revised manuscript.
6. The typing error will be corrected in the revised manuscript.
7. We understand the point the reviewer makes. We checked the rejected samples and found that providing such a ratio would be difficult as most of the rejected samples were related to obvious transmission problems where individual measurements or shorter periods contained unreasonable data and most samples therefore could not be associated with one or the other group. We, therefore, decided not to present such a ratio.
8. Colors will be changed accordingly in the revised version.
9. Thank you very much for this idea which, as suggested, is worth looking at in a following manuscript.

C2

10. To address this point, in the revised version we will add the values of the 95th percentile of significant wave height at each station in a table supporting the Figures.
11. The typing error will be corrected.
12. To address this point we will provide typical ranges for kh in the revised version (see reply to comment # 3).
13. The reviewer is correct. Following the suggestion of Referee #2, we will repeat the analysis using the full dispersion relation and then comment on the identified tendency.

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2020-60>, 2020.