

# Referee Comments

to the research article

Wind waves on the Black Sea: results of a hindcast study  
by V.S. Arkhipkin, F.N. Gippius, K.P. Koltermann, and G.V. Surkova

## Technical corrections

Title: Wind waves in the Black Sea: results of a hindcast study

**p.2** l.7 – use “according to our calculations” or “results show” instead of “in our calculations”

l.11 - Besides ~~that~~,

l.16 - use “off-shore” instead of “marine”

l.17 – use “marine/basin climate” instead of “climate of these seas”; not to be mistaken with particular sea (wave regime)

l.18 – use “intensively for variety of purposes” instead of “intense for very different purposes”

l.19 – I’d remove “on one hand” and “on the other”

l.20 – use “increasing quality requirements” instead of “more and more exacting requirements”

l.21 - “It must be as reliable and accurate as possible” repeats the previous statement

l. 21-23 – “A regular distribution in time and space is a great advantage of any dataset, as it makes it more convenient to use for further purposes” – meaning not clear; maybe you’d like to stress the advantage of regularly spaced model data in contrast to scattered and of short time-span in-situ data

l.24 - Nowadays,

l.24 – use “appropriate” instead of “attractive”

**p.3** l.1 – use “advantage” instead of “preference”

l.3 – use “operational” instead of “operative”

l.3 – use “field” instead of “domain”; not to be mistaken with model domain

l.7 – I’d remove “located”; permit obtaining

l.7 – I’d use “domain/area” instead of “basin”

l.12 – “studies (...)” – instead, the object of study should be mentioned here, e.g. climate

l.13 – use “field” instead of “domain”; not to be mistaken with model domain

l.16 – NB! Kaas et al. 1996; Soares et al., 2002

l.20 - hazardous manifestations of combined wind and wave action

l.21-22 – NB! Alexander and Tett, 2005; Matulla et al. 2008

l.25 – use “was discussed in detail” instead of “much discussed”

- l.25 – use “However” instead of “Thus”
- l.26 – NB! Schmidt and von Storch, 1993
- l.28 – use “found” instead of “seen”
- p.4** l.4 – use “latest” instead of “last”
- l.8 – I’d use “devastating” instead of “ruinous”
- l.18 – I’d omit “generalized”, use “monographs” instead of “reviews”
- l.19 – “widely considered” or just “continued” / “took over”
- l.20 – Studies of Efimov and Komarovskaya (2009) and Polonsky et al. (2011) are examples... NB! Efimov and Komarovskaya (2009) is not listed in References
- l.22 – Another traditional research field is coastal studies in bays and straits (e.g. ....)
- p.5** l.1 – use “variability” instead of “alterations”; I’d remove “even”; consider this “are regarded as a result of wave impact”
- l.2-3 – I’d use “demonstration of oil spilling forecast through numerical modelling”
- l.5 – “the western part of the Black Sea shelf”
- l.8 – use “recent” instead of “last several”
- l.13 – use “variability in the Black Sea” instead of “alterations on the Black Sea”
- l.16 - main goals
- l.16 – use “contemporary/present” instead of “modern”
- l.26 – north-western shelf; consider removing “coastal areas”, it’s a repetition
- p.6** l.22 – use “suitable for chosen numerical grid resolution” instead of “and the numerical grid”
- p.7** l.11 – consider this variant of the sentence “Continuous wind forcing is needed for calculation of the wave parameters.”
- l.14 – hindcast not hindcasted
- l.19 – “significantly larger” instead of “significant bigger”
- l.21 – standard meteorological stations
- l.27 – “including the Black Sea” – please provide more references
- p.8** l.8-10 – it is well known what kind of parameters are calculated using SWAN model. If you don't use them, it's not worth mentioning.
- l.20 – “The Black Sea is a relatively calm area of the World Ocean” Not only this is arguable, but for it seems like a conclusion of your study, you may consider moving it in the relevant section
- l.25 – “heaving” is not an appropriate term; suggestion “area of largest waves”
- l.22 - “its gradient is more expressed at the western coast than at the eastern one” – unclear, consider reformulation or further explanation
- p.9** l.24 – use “SWH maxima” instead of “wave heights”
- l.3 – “maximal” - maximum for singular and maxima for plural
- l.10-11 – “the only area in the Black Sea with a clearly defined shelf” - this is the widest shelf area. The BS shelf although narrow in most parts of the sea is quite well defined.
- l.13-15 – “A recent example of such an event is the storm that occurred in November, 2007” - not quite recent. One could get impression that storm of such severity occurs rarely, at

least not in the past 6 years. On the other hand, you state this is the stormiest part of the basin. Consider reformulation or citation of more recent study.

**p.10** l.2 - Authors mix Figs. 4-5 and 8-9. It is not clear if Figs. 4-7 are original results or are borrowed from Surkova et al. (2013).

l.9 – “Some preliminary results...” It’s left an impression for incompleteness of the study; as if the paper should be regarded as something preliminary

l.16 – “During this project, we managed to achieve some results in this domain.” The same as above

l.18 – period 1948-2010

l.15 – to my mind “long-term” is more appropriate term than “temporal”

l.17 – I’d use “number” instead of “quantity”

l.21 – use “relatively high storminess” instead of “relative active storminess”

l.21-23 – “This period begins in the early 1960-s and ends approximately in the middle of the 1970-s.” – I’d use expression “spans the period from ... until ...”

l.26 – use “January in particular” instead of “especially to January”

l.28 – “rule” what kind of rule? feature / peculiarity

**p.11** l.1 – “Cases of wave heights exceeding 4 m were found only in July” - where?

l.6 – use “large time-span” instead of “enormous length”

l.16 – use “finer/higher” instead of “smaller”

Table1. Quantity and average duration, area and path length of storms: in last row only number of storm is total, other proxies appears to be mean.

Three more proxies are presented here that are not discussed in the text, while they should be, advisably in a discussion section.

Figures (suggestions for caption improvement)

Fig. 1. Schematic representation of the process of creating a rectangular matrix by means of a scanned map digitizing

Fig. 2. Map of calculated/modelled/simulated average significant wave height [m]

Fig. 3. Map of calculated/modelled/simulated significant wave height maxima [m]

Fig. 4/6. [hPa]

Fig. 5/7. Wind velocity [ $\text{ms}^{-1}$ ]..... in Fig. 4/6.; Choose between wind speed and wind velocity

Fig. 8. Map of calculated/modelled/simulated wave length maxima [m]

Fig. 9. Map of calculated/modelled/simulated (mean?) wave period maxima [s]

Fig. 10. Map of predicted 100-yr return period significant wave height [m]

Fig. 11. Interannual variability of total storm duration [h]; linear trend.....

Fig. 12. Interannual variability of number of storm events; linear trend .....