

Interactive comment on “Improving our understanding of wind extremes from Bangladesh tropical cyclones: insights from a high-resolution convection-permitting numerical model” by Hamish Steptoe and Theo Economou

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We thank the reviewer for their helpful comments. Our replies are inline below:

The references are accessible and sufficient in number, although Hersbach (2020) should be cited for ERA5.

Corrected, thank you.

Is it possible to remain consistent in the units? Figures 1, 3, and 5 use m/s, Figure 4 uses knots, and Table 1 uses km/h.

C1

Figure labels have been changed to use $m s^{-1}$ by default, with additional knot conversions in some cases. Table 1 has been converted to $m s^{-1}$.

The title could be made more relevant, mentioning return periods / exceedance probability, and the generalized additive model, e.g. The use of generalised additive models to examine extreme wind return periods from tropical cyclones in Bangladesh.

We will investigate the possibility of changing the title with the Editor.

Space between: 4.4 km

Corrected.

Line 66: Add 9-member: “generate 9-member ensemble simulations of 12 historical C2 tropical cyclone”

Updated.

Line 40: Change ‘course’ to ‘coarse’

Corrected.

Line 58: Change ‘combe’ to ‘comb’

This should be ‘combine’ – now corrected.

Line 194: Include in brackets what the resolution of ERA5 is, as low for this study but not low in comparison to other reanalysis products. “Given the relatively low ERA5 resolution (x)”

‘(31 km)’ added to this sentence.

Lines 210-211: Add a citation following this statement: “current generation weather forecast models are capable of accurately predicting the landfall location and track of tropical cyclones in the BoB many days in advance.”

We have added citations of Mohanty et al., (2020) and Singh and Bhaskaran (2020) as examples.

Line 141: Change ‘of high wind speed’ to ‘to high wind speed’.

C2

Corrected.

Note in the figures that the town labels are the 18 most populated. Town names difficult to see in some of the figures.

'...with the 18 most populated towns and cities marked by circles.' added to the figure captions. We have made some subtle alterations to the label plotting whilst trying not to obscure too much of the underlying data.

Figure 2 caption: Change from "of (Augustin et al., 2012)" to "of Augustin et al. (2012)"

Corrected.

Figure 3: Superscript -1 for the units. Also change 'outlines' to 'outlined'.

Corrected.

Table 1: Change 'define' to 'defined'.

Corrected.

Citations

Mohanty, S., Nadimpalli, R., Mohanty, U. C., Mohapatra, M., Sharma, A., Das, A. K. and Sil, S.: Quasi-operational forecast guidance of extremely severe cyclonic storm Fani over the Bay of Bengal using high-resolution mesoscale models, *Meteorol. Atmos. Phys.*, doi:10.1007/s00703-020-00751-4, 2020.

Singh, K. S. and Bhaskaran, P. K.: Prediction of landfalling Bay of Bengal cyclones during 2013 using the high resolution Weather Research and Forecasting model, *Meteorol. Appl.*, 27(1), e1850, doi:10.1002/met.1850, 2020.

Interactive comment on *Nat. Hazards Earth Syst. Sci. Discuss.*, <https://doi.org/10.5194/nhess-2020-299>, 2020.