

Interactive comment on “In-situ airborne measurements of atmospheric and sea surface parameters related to offshore wind parks in the German Bight” by Astrid Lampert et al.

Christof Lüpkes (Referee)

christof.luepkes@awi.de

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General In this paper an aircraft campaign is described, which has been carried out in 2016 over North Sea in the environment of wind parks. The instrumentation, flight patterns and data sets are explained, which have been made publicly available in the world data center PANGAEA. The paper is generally well written and the unique data sets will be helpful to better understand the impact of wind turbines on atmospheric processes and the water surface. I recommend publication after some revisions mentioned below have been carried out.

Revisions 1) I understand that the goal of the authors is to just describe the data sets

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and to leave the interpretation to later work. However, it might be possible to show in this paper at least one example illustrating the impact of the wind parks, which is missing in the current version. This would attract more readers.

2) Figures 5 and 6 show an unusual structure of the atmospheric boundary layer (ABL). The authors interpreted the peak at 500 m as the ABL top. Usually, a capping inversion is found at the top but here, at least in the average profile, the contrary (unstable stratification) is found. Even more pronounced is such a behavior at 950 m. This situation needs to be explained. I recommend showing two or three examples of individual (thus non-averaged) profiles in addition, since this might help to understand the mean profiles.

3) Measurements below 50 m height are obtained during take-off or landing and thus over land. So, it has nothing to do with the situation over sea and therefore, I would either mark these results with another color or skip them since this might lead to misinterpretation. The average surface temperature is however interesting, but again, the land part should be excluded from the average.

4) The language is ok in general, but I found some misprints and also some unclear sentences: line 9: it should be written ...data set has been shown already by ... line 27: submitted by Bär line 29: as well as for (skip ‘Ž’) line 30: WIPAFF has been... line 37: probably, the authors mean resolution is more than 1 m (or larger than...) line 39: and in particular over the sea ice ... line 58: meteorological line 60: sentence with resolution is a repetition of the introduction. The corresponding sentence of the introduction could perhaps occur here (?) line 73: give value of kappa. Line 105: and to derive Line 112: explain sigma line 142: instead of behind write ‘downstream’ line 165: I do not really understand the double averaging procedure for mean values. Does the first average mean the application of a filter so that, e.g., 1 Hz data result? line 166: Not completely clear how to understand the minimum and maximum. At each height, the minimum and maximum values were determined from all available profiles together? Line 206: better write something like: data base to date, from which the

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impact . . . can be derived.

Figures: Figures 3 and 4: use text size for label size as in the other figures. Times cannot be read. Either skip them or mark them in a different manner. German headings should be skipped as well and information should be given in the captions. Explain scale for wind speed.

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