

“Evaluation of low-level jets in the Southern Baltic Sea: a comparison between ship-based lidar observational data and numerical models”

Rev v3

Hugo Rubio, Martin Kühn, and Julia Gottschall

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Authors response to reviewer comments

We would like to thank the referees for their time and effort in reviewing our work. We appreciate their feedback and comments, and we have carefully considered their criticisms to improve and clarify our work.

Below, we addressed the additional comments of referee #2 and replied to them point by point. First, the referee’s comment is included (in italics and bold font), followed by our answer and the new excerpt from the revised version of the manuscript (in blue font) when applicable.

Anonymous Referee, Referee #2

- 1) Figure 13 It is not clear from the figure caption which subfigures represent ERA-5 and NEWA respectively**

This has been clarified in the figure caption.

- 2) It would be beneficial for someone native in English to go through the most recent additions to the manuscript.**

As suggested by the referee, we have carefully reviewed the added excerpts from the manuscript to improve the readability and clarity of the text. Not only, but including the following specific referee’s suggestions:

- a) Lines 479-480 ” Oppositely, ERA5 exhibits a more relevant sensitivity to the spatial shift, with a notorious gain in the LLJ frequency compared to the reference case”, please go through the phrasing here. Perhaps something like “ERA5 displays a stronger sensitivity to the spatial shift with a large gain in the ...”?**

This has been clarified.

- b) Line 488 “Considering the time shift is substantially more influential for both reanalyses.” Please rephrase, not clear what you mean here.**

This has been rephrased.

- c) Line 528” On the other hand, it is also striking the relevant quantity of false alarms presented in NEWA during the morning of the 5 March (an example is shown in Figure**

16d)", please clarify. Do you mean something like "The number of false alarms in NEWA during the morning of 5 March is striking." ?

This has been clarified.

d) Line 592 "The results show that considering either the spatial or phase models' shift has the potential applicability to improve the climatological performance of the models for evaluating LLJ", please clarify. Do you mean: "The results show that spatial and temporal shifts of the model output has the potential of improving..."?

We do not mean that the models' spatial and temporal shifts can improve their performance, but that properly considering these errors can lead to more reliable results regarding LLJs' climatology. This has been clarified in the manuscript.