

## ***Interactive comment on “Development and comparisons of wind retrieval algorithms for small unmanned aerial systems” by T. A. Bonin et al.***

**T. A. Bonin et al.**

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Thank you for your comments. The changes have been made in the updated manuscript that will be posted shortly. Followed is a point by point response to your comments.

C: Comment R: Response

C: I feel that the title does not fully resemble the content of the paper. It is clearly a comparison of those algorithms, but I have problems to see a considerable development of those. In my opinion ‘Comparison and application....’ would describe the manuscript by far better.

R: Authors agree and the title change has been made.

C398

C: My main concern is related to the results of the comparison between UAS and RaSo wind profiles presented here. After my experience it is usually difficult to get reliable wind data from radiosoundings at altitudes below 200-300 m above the ground. This seems also to be visible in most of the examples shown in Figure 5. Therefore I am a bit critical to use these measurements for an intercomparison close to the ground. In this context I also would like to get more information on how the numbers of Table 1 have been derived. I assume it includes all altitudes and therefore could be affected by the RaSo data quality at lower altitudes. One solution could be to present the RMSE for different altitude intervals. It is also not clear for me on how many radiosoundings and UAS profiles the results of table 1 are based. I suggest a more thorough description of the statistical analysis of the UAS-RaSo intercomparison.

R: For the intercomparison between the radiosoundings and the UAS observations, only wind observations from over 300 m AGL were compared while computing the error statistics. This is clarified in the paper in line (254) and in the table’s caption. Additionally, the number of radiosondes used to calculate the RMSE has also been clarified.

C: Minor comments: Line 21: I suggest to replace ‘evolve much quicker’ by ‘evolve and vary much faster’

R: This change has been made.

C: Fig. 5, 6 and 7: the labels are too small Fig. 6 b and d: I suggest the use of symbols instead of lines for presenting the wind direction

R: Labels have been made bigger in the updated version of the paper. Also, symbols have now been used in Fig. 6b and d.

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