

## ***Interactive comment on “Evaluation of Windsond S1H2 performance in Kumasi during the 2016 DACCIWA field campaign” by Geoffrey E. Q. Bessardon et al.***

**Geoffrey E. Q. Bessardon et al.**

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**Title:** Evaluation of Windsond S1H2 performance in Kumasi during the 2016 DACCIWA field campaign

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We thank the anonymous referee for the helpful comments. We are responding to all the comments of the reviewer in this document and we have prepared a revised manuscript where changes made for the previous revised manuscript are marked and

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in blue and changes for this manuscript are marked in red. In the following, comments of the reviewers are given in bold and italic with our responses are given in normal font.

**Overall comments: *The authors have offered adequate responses either by addressing my comments or revisions to the paper. However it should be clearly stated in the abstract that this Windsond is intended primarily for collecting boundary layer observations.***

Answer: This information has been added on the first sentence of the abstract

**Also note that boundary layers are typically 500 m over the tropical oceans but can be 5 km deep under summertime continental conditions. So in the first sentence of the conclusions where you state that it measures conditions at lower altitudes, lists an approximate height range where observations are considered good. For example, "... lower altitudes (up to 2 km)" or whatever altitude you trust your data.**

Answer: This information has been added to the first line of conclusion

**Finally, in your response you mention that you thought the balloon did not effect the winds. But there is also a concern during daylight flights that radiative effects off the balloon with a short 4m string could effect the T and RH measured by the sonde.**

Answer: That is true, our answer was focussed on the wind speed error as the wind speed error was the largest. The balloon used under a 4 meter rope for the reproducibility experiment was smaller than the balloon used during the performance flight when the Windsond was taped to Vaisala sondes under the 20 meter string. The T and RH errors during the performance flight are a similar magnitude during the reproducibility experiment so the smaller ballon under a 4 m rope does not seem to have a similar impact on data compared to the larger balloon with a 20 m rope. However, we recognize that the use of a longer string with the smaller balloon would be an in-

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expensive way to reduce the radiative effects on the data collected by the Windsong system.

**Suggested rewording:**

All the suggested rewording have been applied to the manuscript

***Line 30: This rough estimate varies regionally as the price of labor, helium and balloons is not the same around the globe. Yet operational costs are a significant investment in countries with limited resources.***

***Line 111-115: "... the Vaisala ground station has a GPS receiver ... However, wind speed and direction are determined independently from the GPS position using the GPS doppler frequency shifts.***

***Line 117: "Similar to the RS41-SG ..."***

***Line 206: "... performed. To be statically significant this result needs to be verified with additional performance ..."***

***Line 239: "During the descent after the sonde loses contact ..."***