

Third Review for AMT-2018-179 (Bessardon et al.)

Title: Evaluation of Windsonde S1H2 performance in Kumasi during the 2016 DACCIIWA field campaign

Authors: Geoffrey E.Q. Bessardon, Kwabena Fosu-Amankwah, Anders Petersson, Barbara J. Brooks

Overall comments:

I agree with the other reviewer that this paper suffers from a number of critical weaknesses as was pointed out in their review. While the revisions add some additional technical information, clarify a few issues, and cite a relevant study, the majority of the shortcomings still remain (in particular, the design of the intercomparisons and lack of meaningful analysis). That being said, the paper points out some important shortcomings of the current S1H2 sonde, namely its slow humidity response time and poor performance at computing accurate winds. Since the S1H2 sondes have been used in at least a few field programs, this information might be useful to those using the S1H2 data. So despite the obvious weaknesses of the paper, I still recommend it be published. However I do suggest that the authors include a paragraph in the summary section where they offer some practical suggestions for an improved intercomparison study to better characterize their S1H2 sonde.

Suggested rewording:

Line 38: “which is tethered to two balloons. Their system allowed one balloon to detach at a desired altitude and have the caged sonde slowly descend with the second balloon prior to recovery. While this system ... and recovery rates, it does not assess ...”

Lines 42-43: last part of this sentence is poorly written and difficult to understand.

Line 49: “in order to prepare ... observations recorded” – this is difficult to understand. Are you trying to say, “in order to better understand changes in the nocturnal boundary layer, as well as ...”

Line 125: Using a Windsonde without a pressure sensor requires an accurate pressure measurement at the surface if pressure above the surface is to be computed using GPS altitude information.

Line 192: “humidity changes associated with cloud top before ...”

Line 312: “needs a faster response time ...”