

Responses to editor and reviewers' comments

Editor's Comments to the Author:

Based on the reviews of your revised version I am happy to accept your paper for publication in ACP. Congratulations. Please take the technical comments into account when preparing the final version.

Rolf Müller

Non-public comments to the Author:

I have noticed:

1). 505: Russian --> Russia

⇒ "Russian" is replaced by "Russia"

2). 506: Stated --> States

⇒ "Stated" is replaced by "States"

Comments from Reviewer#1

1). The paper is much improved over the previous version. It is shorter and clearer and the conclusions are for the most part well stated. The main issue that needs to be addressed in the final version is to be consistent in the order of radio occultation (RO) and radiosonde when talking about differences and biases. In all cases of the reported numerical differences, it is "radiosonde minus RO," but in some places in the text (including the abstract), "RO minus radiosonde" is used. This is confusing. "Radiosonde minus RO" and "radiosonde-RO" should be used throughout the paper.

⇒ All the order of radio occultation (RO) and radiosonde when talking about differences and biases are rewritten as "radiosonde minus RO" throughout the paper.

2). There are many numbers reported in the paper, and sometimes it is not clear which figure or table they come from. This should be clarified in the final text.

⇒ All the numbers reported in this paper are double checked. For example, to make sure the numbers in the text agree with those listed in Tables and Figures, we re-write line 44 (in abstract) as "The mean radiosonde-RO global daytime temperature difference in the layer from 200 hPa to 20 hPa for Vaisala RS92 is equal to 0.20 K. The corresponding difference is equal to -0.06 K for Sippican, 0.71 K for VIZ-B2, 0.66 K for Russian AVK-MRZ, and 0.18 K for Shanghai."

⇒ We also insert several referred Tables and Figures when those numbers are mentioned in the text so that readers will know where exactly those numbers are coming from.

3). Finally, there are a number of minor editorial issues and typographical error that I will not summarize here. Instead, I sent suggest edits directly to the authors.

⇒ We had gone through another round of editing. Several typographical errors are corrected. The tracked and revised version is also submitted.

Comments from Reviewer#2

The paper has considerably gained in quality. There are only a few minor points:

1) Please do not give 5yr trends in 0.001K/5yr precision when the confidence interval are more than 0.1K/fyr. 0.01/5yr is already too much but could be tolerated

⇒ We agree to report precision level of 0.01K/5 yrs in the text but in this stage we do not further revise the numbers in Tables and Figures.

⇒ The trend “5 years” are replaced by “5 yrs” throughout the paper.

2) Abstract line 41: Please specify layer to which the mean applies (20-200 hPa I presume). This is important.

⇒ In line 44 we add ” in the layer from 200 hPa to 20 hPa for Vaisala RS92”

3) 195: research, not "researches"

⇒ In line 70 “researches” is replaced by “research”

4) 1430: this is not an adequate citation. Perhaps the link is gone the time the paper is published.

=> I assume the review meant link in line 422 in the revised paper

“<http://www.vaisala.com/en/products/soundingsystemsandradiosondes/soundingdatacontinuity/RS92DataContinuity/Pages/revisedsolarradiationcorrectiontableRSN2010.aspx>”.

This is still a correct link.

5) 1474: low sample sizes, not sample "numbers"

=> In line 317, we replace “sample numbers” with “sample sizes”

6) 1530: Figure 3 indicates that RS92 measurements have high quality in terms...

⇒ In line 348, we revise that sentence as “Figure 3 indicates that RS92 measurements in different regions have a similar quality in terms of”

7) l856: less than 0.25

⇒ In line 471, we add “less than 0.25K”