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Atmospheric Measurement Techniques Discussions

Interactive comment on "Evaluation of two Vaisala RS92 radiosonde solar radiative dry bias correction algorithms" *by* A. M. Dzambo et al.

Anonymous Referee #5

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1. General comments

This is a solid article that I would recommend for the publication.

2. Specific comments

Title: MILO is not only a radiation correction, it includes as second component a time-lag correction. RH sensors of RS92 need time-lag correction (see Dirksen et. al. 2014).

Representative data set: See P10766 L22-24: In section 4 a data set of 5 years from site SGP is used. That sounds good and means for me ∼1825 soundings.

See P10768 L24: After removing all launches which are not fit several criteria –> only

96 cases are used. Can you clarify, if these launches (∼ 5 % of full dataset) are representative for whole dataset?

Comparison with a reference: See Fig.5, Fig. 8, Fig. 9, Table 2, Table 4

If I want to compute a bias or other difference to a reference, I would use following formula: bias = data – reference

Unfortunately, in a couple of figures and tables the author computes it in a different way (reference – data) as a residuum. Because that, it is confusing for me to follow at a couple of passages. Particularly if the author uses in the text other values then in the figures. One example: - See P10770 L6: 'approximately 0.2 to 0.4 K' - See Fig. 8: all differences are below zero

3. Technical corrections

P10759 L1: Footnote 1 is not correct. RS92 needs a time-lag correction (see Dirksen et. al. 2014).

P10759 L6: Vaisala published DigiCora v3.64 in December 2010. Note: it was possible to deactivate these new RH corrections (time-lag and radiation) in configuration.

P10764 L26-27: Values should not have fraction with three digits. The results are not so exact.

Figure 3: Ordinate is labelled with 'PWV(MWR) – PWV(SONDE) (cm)'. But it should labelled with 'PWV(SONDE) – PWV(MWR) (cm)', because plot shows dry bias of radiosonde against MWR.

4. Typos

P10760 L22: 'ile' at begin of line is too much

P10777 L31-: List of authors is wrong for Seidel et al., BAMS, 2009. Correct citation is: D. J. Seidel, F. H. Berger, F. Immler, M. Sommer, H. Vömel, H. J. Diamond, J.

Dykema, D. Goodrich, W. Murray, T. Peterson, D. Sisterson, P. Thorne, and J. Wang, 2009: Reference Upper-Air Observations for Climate: Rationale, Progress, and Plans. Bull. Amer. Meteor. Soc., 90, 361–369.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 10755, 2015.