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Atmospheric Measurement Techniques Discussions

Interactive comment on "Quality assessment of Dobson spectrophotometers for ozone column measurements before and after automation at Arosa and Davos" *by* René Stübi et al.

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Reply to referee#1 comments on AMT-2020-441 manuscript, "Quality assessment of Dobson spectrophotometers for ozone column measurements before and after automation at Arosa and Davos" by René Stübi et al."

The authors thank referee#1 for the valuable comments and suggestions that allow us to improve our manuscript.

Comment 1. 3.1 Data quality control: I like the detail in the explanation of the automated procedure. I would have liked to have seen a daily record before and after this

procedure was applied.

Reply: It would have been difficult to illustrate the procedure with a single figure since many atypical cases regarding the outliers are of interest. The selection of the parameters (polynomial function, thresholds) were empirically determined by trial and error. An example (as illustrated in Figure 1) would have been possible but it does not show the variety and complexity of outliers' detection.

Comment 2. The use of the subscripts to identify specific Dobson instruments is not consistent.

Reply: We re-established the consistency of the various Dobson subscripts.

Comment 3. Page 2, line 5, suggestion of a different sentence

Reply: We adopted the proposed wording.

Comment 4. Page 2, Line 31.The first mention of the term Umkehr should have a reference or explanation.

Reply: We introduced a sentence to explain the Umkehr method and a reference to Petropavlovskikh et al. (2009).

Comment 5. Page 4, Line 15: Suggest explaining that the optical alignment of Dobson instruments (Dobsons) is standardized for all instruments.

Reply: We introduced a sentence along the lines suggested by the referee.

Comment 6. Table 1, Line 3: Define SOOH. Line 9: Define MOHp.

Reply: A new paragraph explaining the WMO Dobson calibration procedures is introduced in response to a comment of the second referee. The acronyms SOOH and MOHp are therefore defined in the new text.

Comment 7. Line 15: Define SL- (Only place in manuscript that these terms are used)

Reply: We have removed the abbreviation SL and given the full words.

Comment 8. Table 2, Caption: Suggest defining the specific standard instrument.

Reply: This suggestion is difficult to satisfy since there is no standard instrument. We stated D101 as the reference during the MMC and MAC when it is present in the pair comparison. However, we do not have an instrument that is more “standard” than the others are.

Comment 9. Figure 3, Consider using a different color, and line weight for the arrows indicating the calibration / maintenance campaign for better visibility.

Reply: We increased visibility of the arrows.

Comment 10. Page 23, Line 6, Komhyr (spelling) and Page 3 Line 8

Reply: Spelling corrected

Comment 11. Page 23, Line 28: Citation should be: León-Luis, S. F., Redondas, A., Carreño, V., López-Solano, J., Berjón, A., Hernández-Cruz, B., and Santana-Díaz, D.: Internal consistency of the Regional Brewer Calibration Centre for Europe triad during the period 2005–2016, Atmos. Meas. Tech., 11, 4059–4072, https://doi.org/10.5194/amt-11-4059-2018, 2018.

Reply: Reference corrected.

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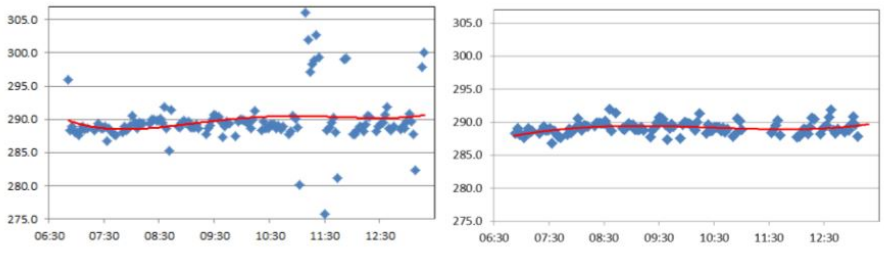

Fig. 1. Figure outliers_removal