

## ***Interactive comment on “In search of traceability: two decades of calibrated Brewer UV measurements in Sodankylä and Jokioinen” by J. S. Mäkelä et al.***

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Answers from the authors to the Interactive Comment on “In search of traceability: two decades of calibrated Brewer UV measurements in Sodankylä and Jokioinen” by J.S. Mäkelä et al.

Referee #2

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The authors wish to thank the Referee for his comments and suggestions for the revision of the manuscript.

C1

The comments are answered below in the following sequential manner: Q denoting the original comment; A denoting the authors' answer to the comment, and C denoting the corrections and amendments to the manuscript.

Q: This is a well-written paper that will be of interest to the UV and ozone community. It clearly describes a detailed and professional approach to maintaining the calibration of Brewer spectrophotometers. As noted by the authors there is insufficient literature extant to guide the use of the instruments in making long-term UV spectral measurements. This paper is a very useful addition to that literature. It is recommended that the paper be published with minor revisions as indicated.

Q1: Page 2, Line 14 ‘...difficult calibration tasks...’ Singular

A1: We agree. The expression is now corrected.

C1: We have replaced the original expression ‘...difficult calibrations tasks...’ with ‘a challenging task’

Q2: Page 3, Line 21 ‘...was moved...’

A2: We agree. The sentence has been corrected.

C2: We have corrected and rephrased the sentence to read “In November 2015, Brewer #107 was moved to Helsinki (60.20° N, 24.96° E) where it has been operated ever since.” In the revised manuscript, the sentence appears at the end of the first paragraph of Chapter 2 now titled “2 Brewer spectrophotometer and its calibration for solar spectral UV irradiance measurements”.

Q3: Page 8, Line 24 Suggest: ‘...exactly how the averaging of the valid lamps should be done...’

A3: The sentence has been removed in the revised manuscript, as a part of a chapter rewritten completely.

Q4: Page 8, Line 25 ‘Furthermore, ...’

C2

A4: This particular sentence has been removed in the revised manuscript, as a part of a chapter rewritten completely. However, we have used the connector word “Furthermore” in another place in the text.

Q5: Page 9 Not a comment on the paper: I found that the radiance of the lamp could be quite well modeled as a black body curve except for a local anomaly near 300 nm due to a tungsten absorption feature. This might provide a smoother way to interpolate radiances.

A5: We wish to thank the Referee on this point.

Q6: Page 9, Line 10. This referee feels that scientific literature should be written in the third person unless it is impossible to do so.

A6: We realize that the use of the third person is indeed often recommended to be used in scientific literature. We have checked the manuscript and revised all occurrences of the first person pronoun “we”.

C6: Nine occurrences of the first person pronoun “we” have been removed in the revised manuscript and replaced by an expression using the third person.

Q7: Page 9, Line 25 ‘Yet, it is suggested that...’

A7: We agree.

C7: We have removed the first person pronoun “we” and rephrased the sentence using the third person.

Q8: Page 10, Line 8 ‘...it is suggested that...’

A8: We agree.

C8: We have removed the first person pronoun “we” and rephrased the sentence using the third person.

Q9: Page 18. F6. Include the instrument number and type in the caption.

C3

A9: We agree.

C9: We have revised all the figures, including Fig. 6. The figures now include the information necessary for the identification of the instruments and the individual lamps.

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Interactive comment on Geosci. Instrum. Method. Data Syst. Discuss., doi:10.5194/gi-2015-40, 2016.

C4