

## ***Interactive comment on “Evaluation of the use of five laboratory determined ozone absorption cross sections in brewer and dobson retrieval algorithms” by A. Redondas et al.***

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The authors appreciate the time the reviewers have spent in assisting us to produce a high quality, understandable publication. All the requested corrections and suggestions are accepted and already introduced on the corrected version of the paper on the supplement. The responses to the comments by the Reviewer #2 follow.

1. A very larger number of abbreviations is used, some are not commonly used in atmospheric science(e.g. XS for ozone absorption cross sections, BOp, B05, C9693

IGQ4 and many more ....). I recommend to produce a list of all these abbreviations so that the readers can easily find help when they forget the definitions of these abbreviations when reading the paper;

**Response:** *A glossary was added as Appendix A*

2. Title: 2. I would prefer large spellings in ..... Brewer and Dobson .....;

**Response:** *Text is changed.*

3. Line 6, p. 22980: I recommend to write: three data sets that are based on measurements of Bass and Paur (1985), one deduced from Daumont, Malicet and Brione , ... ;

**Response:** *Text is changed.*

4. Line 16, p. 22980: IUP instead of UIP;

**Response:** *All UIP's changed to IUP*

5. Line 17, p. 2298: the calculated ...

**Response:** *Text is changed*

6. Line 22, p. 2298: Point at the end of the sentence.

**Response:** *Text is changed*

7. Line 16, p. 22981: I don't believe that the difference between Dobson and Brewer measurements are "removed", I think "strongly reduced" is more appropriate;

**Response:** *Agreed: text is changed*

8. Line 4, p. 22982: advisory Group (SAG) for ozone of

**Response:** *Text of this sentence is changed.*

9. Line 26/27, p.22982: I think this sentence is not correct: In double combinations (AD and CD) the effect of atmospheric aerosols is minimized ?

**Response:** *Text of this sentence is changed*

10. Material and Methods: 10. Line 16, p. 22983: Perhaps add: (I0) (for determination of I0 see 3.2.1)

**Response:** *Text of this sentence is changed.*

11. Cross sections (xs): do you mean ozone absorption cross sections: I think earlier in the text you used large letters;

**Response:** *We have changed the notation for cross-section to be more consistent.*

12. Line 3., p. 22985: I think it would be worth to introduce here the classification used here for Dobson and Brewer instruments: D for Dobson and B for Brewer instrument followed by the fabrication number;

**Response:** *Suggestion accepted.*

13. Line 11, p. 22985: provided by Environment (?)

**Response:** *Text is changed to Environment Canada.*

14. Line 26, p. 22985: appears to include (?) spectra at selected ...

**Response:** *Text of this sentence is changed.*

15. 15. Line 22, p. 22986: I think you should consistently use IUP;

**Response:** *All UIP's changed to IUP.*

16. Line 25, p. 22986. I think you should here explain the difference between IUP and IUPQ;

**Response:** *A more complete description is in the added glossary in the appendix A.*

C9695

17. Line 16, p. 22988: Do you mean Komhyr et al., 1993 when citing Komhyr93

**Response:** *Corrected.*

18. Line 15, p. 22993: Lower than that for ....

**Response:** *Corrected.*

19. Line 23, p. 22994: I don't believe that “;” is adequate;

**Response:** *Corrected.*

20. Line 9, p. 22995: I don't believe that “;” is adequate;

**Response:** *Corrected.*

21. Line 6, p. 22996: There should be a point at the end of the paragraph;

**Response:** *Corrected.*

22. I suggest to start the conclusions with a sentence and possibly number the individual conclusions – the way the conclusions are presented remembers me to the style of a notebook rather than a scientific publication.

**Response:** *This section has been re-written.*

23. I don't know what the numbers of individual references (after year of publication) mean;

**Response:** *The numbers behind the references are the links to the citation in the text, and are added by the Copernicus Publications*

24. Table, e.g. 1, 5 and 7: You should not use the abbreviations (FWHM, DXS, XS) in the headings of the Tables;

**Response:** *Text has been changed, with the exception of Full With Half Maximum, which is too big for the heading of the tables, the abbreviation is explained on the caption of the table.*

C9696

25. I suggest to remove from all Figures top lines (this information needs to be given in the legend);

**Response:** *The top line were removed and the information added to the captions*

26. I think the rather special abbreviations such as “ B Op, IGQ4 etc...(Fig. 1, 2, 4, 5, 6, 7) need to be spelled out, at least in the first figure, for the others you can refer to Fig. 1;

**Response:** *A reference to definitions in Appendix A has been added and descriptions in captions added.*

27. Fig. 1: What mean the different colors of the thick line of the spectrum ?

**Response:** *The different colors relate to the different colors of the points used to plot the various cross-sections. The density of the points gives the appearance of a solid line.*

28. Fig. 3: Legend:.... Coefficient for every instrument ... to what is “every” related to ? This should be evident when reading the text of the legend;

**Response:** *Text has been changed to say “each individual”.*

29. Fig. 4: I think it is difficult to figure out what the numbers on the bottom of the Figure exactly mean,please explain (in the text of the legend);

**Response:** *Text has been changed and a label added to the axis.*

30. Fig. 6: I would replace XS by ozone absorption cross section in the text of the legend, and possibly refer to the legend of Fig. 1 for the strange abbreviations like IGACO B&P.

**Response:** *Changed.*