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Open Access Earth System Science Data Discussions

Interactive comment on "The MPI-Mainz UV/VIS Spectral Atlas of Gaseous Molecules of Atmospheric Interest" *by* H. Keller-Rudek et al.

H. Keller-Rudek et al.

rolf.sander@mpic.de

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Reply to referees

Referee #1

> *Excellent paper and spectral atlas. Well documented and presented. Data is easy to find and seems accurate and well referenced.*

We thank the referee for these compliments.

Referee #2

> *Interpolated data sets: For many molecules cross section data sets of interpolated values are provided. In most cases, the original cross section data was not reported in this form but has been calculated by the database managers. This needs to be made more clearly in the notes. I personally do not find these data files useful and in most cases confuse the origin of the data. My recommendation would be to eliminate these files from the database.*

We think that data interpolated to fixed 1-nm, 2-nm, or 5-nm intervals are useful because they are often needed for computer modeling or to facilitate comparison with other spectra. Some of our interpolations were made for and adopted by the JPL evaluations, e.g., I_2 from 185 to 700 nm. To ensure that they are labeled properly, we have checked these data sets in the spectral atlas. There are currently 39 interpolated data sets in the spectral atlas, and in all cases it is mentioned in the comments section on the web page that the data have been calculated at the Max-Planck-Institut für Chemie in Mainz. In a few cases we noticed that the spectral atlas contained several interpolations for the same species. Such duplicate interpolations have now been removed.

> *Quantum yield tables: Table 5 in the paper gives an example of a quantum yield table. The formula contains (H+HCO) following the molecules name in several places. The (H+HCO) label indicates the photolysis channel but this nomenclature is unnecessarily confusing and should be revised for improved clarity to the user.*

We agree, and we are now showing the photolysis pathway with an arrow instead of using the notation with the curly braces. However, we must maintain the original notation for the quantum yield data files because filenames cannot contain any arrows.

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Graphics: Figures 2 and 3, which are representative of the figures in the database, are fine for the database presentations but are not of publication quality in terms of clarity and labeling.

Figure 3 is a flow chart and not taken from the database. We suspect that the reviewer refers to the plots in Fig. 1 which indeed show examples from the spectral atlas web pages. We think that the problem resulted from squeezing the whole figure into the online page layout of the ESSDD format (note that you can see the figure in full resolution if you magnify the page in your pdf viewer). For the layout of the final revised paper, we will use a whole A4 page for Fig. 1 which will increase the size of all labels to publication quality.

Personal communications: There are numerous examples of cross section data obtained from personal communications, a number of which are from the database managers own work (some are also from papers prior to the age of electronic supplements). The data is in many cases probably the "best" data available but the database user has no means to substantiate these results if they do not appear in the peer-reviewed literature. Do the guidelines for the database allow including unpublished results, now and in the future?

As the reviewer correctly points out, we have not mentioned our policy for unpublished results in the manuscript. In the revised version, we have added the following text at the end of the section "Data acquisition":

> Finally, unpublished results that are received directly from the authors are also accepted. Indeed, the main aim of the spectral atlas is a collection of measured data and not an evaluation. Inclusion in our spectral atlas does not mean that we endorse the data set or guarantee for its quality. Instead,

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we recommend to consult the overview plots (described below) in order to detect differences between the data sets.

| *Typo: Page 415: noughties should be eighties*

Noughties is correct. It refers to the years 2000-2009, see: https://en.wikipedia.org/wiki/Noughties. However, the word noughties is apparently less widespread than we thought. Therefore, we have changed it to “early 2000s”.

Referee #3

| *Page 415, lines 22 and 24. Chinese and French should be capitalized.*

Done.

| *Page 415, line 26. Not sure in "noughties" is a real word. "Early 2000s" might be better.*

See our answer to Referee #2.

| *Section 3.3. Could this be moved earlier to link with section 2? It seems to fit better, and may avoid a little repetition.*

We moved general statements about units from section 3.3 to section 2. In section 3.3, we only kept text that specifically refers to the units used inside the spectral atlas.

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> *Reference to El-sebbar. Usually the journal is abbreviated to JQSRT; it should at least include the "Trans" which is missing at present.*

We are sorry for this typo which happened during the typesetting stage, and we have corrected it.

> *The descriptions for the crotonaldehyde spectra were confusing (why are the two Mainz spectra shown different?).*

We thank the referee for spotting this. There was indeed an error in the data and we have corrected it.

> *Also, I couldn't access any of the figure for quantum yields when I looked.*

Unfortunately, the graphical representations of quantum yields are still under development and not available on the web site yet. We hope to be able to provide these soon.

Interactive comment on Earth Syst. Sci. Data Discuss., 6, 411, 2013.