

Interactive comment on “Harmonized dataset of ozone profiles from satellite limb and occultation measurements” by V. F. Sofieva et al.

Anonymous Referee #1

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General comments

This manuscript introduces the reader and potential data user to a “harmonized” set of profiles of ozone abundance versus pressure (or altitude), along with (random) uncertainties and other auxiliary parameters of interest, some of which are instrument-specific. The intent is to provide similarly-formatted datasets that are close to the original datasets but with common grids that allow for easy (or easier) comparisons, both in space and in time, for the period 2001-2012. This time period encompasses missions from ENVISAT (with data from GOMOS, MIPAS, and SCIAMACHY), Odin (with OSIRIS and SMR data) and SCISAT (with ACE-FTS data).

The data description is clear enough overall (see some exception below), and the data

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usefulness is fairly well explained, along with a good but limited set of plots and examples. More results are to be presented in a subsequent publication.

A few issues

One exception to the clarity comment above has to do with the conversion from original vertical grids to the current pressure grid. While Table 1 provides some information, it would be best to see a description under each instrument heading (paragraph) to clarify how these conversions were done, because this can be a source of some differences (e.g., if some temperature datasets have issues that others may not have, like offsets or drifts in time or space). Also, one usually needs a reference point for transforming from altitude (native) grid to pressure, where one knows (or assumes) the pressure and altitude values. So how are such details handled in each dataset? Having such information in a README file (if this indeed exists there) is not necessarily the preferred way to publicize these things, given that this submitted manuscript can be used for such purposes (and is probably better reviewed).

Also, it is not immediately clear when and how the data will be made public to any interested user across the globe. The link is currently tied to a password request. Is the intent to lift this password when this paper is published or when (or how does one obtain the password)? Simply by asking the first author, for example? At any rate, readers will wonder what the plans are or might be. Is this (public) information currently missing just because of the publication or because of some other technical issues? Please clarify.

If these comments can be answered and a revised version submitted, this is a useful publication/overview. These datasets are likely to be accessed by a variety of data users in the near future, given the constant scrutiny that ozone is under.

I recommend publication after the above comments are considered (and after the minor comments below are taken into consideration as well).

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Minor comments

Page 191, Line 18: The option or choice of providing vertical resolution for each profile does not mean that for each instrument or profile, this vertical resolution changes, correct? Could you be more specific here as this profile-per-profile change may be rare?

Page 192, Line 19: "The datasets cover..." [English]

Page 193, Line 7: SI2N needs to be defined.

Page 194, Line 12: It may be good to specify "(for each instrument)" after "Each netcdf file".

Short descriptions: In each instrument paragraph, delete "the" before "vertical resolution".

Page 197, line 5: I suggest keeping the present tense (as for other instrument descriptions), for "MIPAS is a Fourier ...", in this sentence at least. - also, line 18, move "processor" before "under this comparison". It would also be good to have a description of what "best performing" means...if possible in a sentence or two.

Page 198, Line 7: "The SCIAMACHY field of view is 2.6 km at a distance of..."

Page 199, Line 4: "contaminated by clouds"

Also, for OSIRIS: is there any recommendation regarding how to screen the profiles (optimally)? Is this completely up to the user to discover or re-discover?

Line 25, I suggest deleting "on" before "every third" and before "every other day".

Page 200, Line 17: Change "User" to "Users". This sentence sounds quite vague, however...

Page 202, Line 24: please explain briefly at least where the 1-2% number comes from (what type of simulation or test/analysis?).

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Page 203, Line 24: I suggest "A sample visual..."

In Table 2, does the altitude variable correspond to the pressure altitude equation at top of page 206 or is it a different set of altitudes (obtained how, if so)?

In Figure 1, why do the number of measurements (for MIPAS and SCIAMACHY) decrease so much in 2012 (is this just as a result of the partial year for 2012 and the loss of ENVISAT)? And why does GOMOS not show any data for 2012 in this plot?

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