

Dear Reviewer,

Thank you very much for your valuable comments on our paper esd-2013-14 “Harmonized dataset of ozone profiles from satellite limb and occultation measurements”. Below we present the detailed replies to your comments.

COMMENTS

Reviewer#1

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).

Authors: In each instrument section, we have added details of data interpolation and unit conversion (when applied). In addition, we discuss the possible uncertainties that can be caused by unit conversion and interpolation. Since we preserve in HARMOZ the “native unit” 3 instruments, ozone concentration, and since we use consistent (based on retrieved temperature) conversion for MIPAS and ACE-FTS, we do not expect considerable associated inaccuracies in HARMOZ. This discussion is also added in the revised version, Section 2.

Reviewer#1

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.

Authors

We have already replied on this comment in a separate note.

Data are in open access, i.e. no password and no registration is needed. When click on the download link or on the product ID, a confirmation note appears “You are about to log in to the site "ftp-ae.oma.be" with the username "cci_web"”. Then simply click “OK”. We have added this information to the HARMOZ web-page.

Reviewer#1, 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?

Authors: The (actual) vertical resolution of profiles depends not only on sampling rate of detector but also on smoothing properties of the inversion procedure. For some instruments, like GOMOS and OSIRIS, the actual vertical resolution is the same for all profiles. For other instruments - MIPAS, SCIAMACHY, SMR- the vertical resolution varies from profile to profile.

Reviewer#1

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”.

Authors: Corrected as suggested.

Reviewer#1

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.

Authors: We corrected the English and added more information about the intercomparison of four MIPAS processor performed within the Ozone_cci project.

Reviewer#1

Page 198, Line 7: "The SCIAMACHY field of view is 2.6 km at a distance of. . ."
Page 199, Line 4: "contaminated by clouds"

Authors: Corrected

Reviewer#1

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?

Authors: As written in our paper (original version), the screening procedure for OSIRIS is described in detail in [Adams et al., 2013a]. In the revised version, we have included more details of the OSIRIS screening procedure.

Reviewer#1

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

Authors: Corrected

Reviewer#1

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

Authors: Corrected. We have changed this sentence to "Users may use a higher threshold value and apply stricter filtering depending on application".

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

Authors: The effect has been evaluated via comparison of original GOMOS data (the best vertical resolution, 2-3 km) and the same data but smoothed down to 3.6-4.2 km vertical resolution, approximate vertical resolution of MIPAS and SCIAMACHY). This is explained in the revised version.

Reviewer#1

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

Authors: Corrected

Reviewer#1

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)?

Authors: It is different (see the dimension of the data). The altitude-pressure profiles are based on retrieved data or taken from the meteorological data at the locations of measurements (Table 1). This is clarified in the revised version.

Reviewer#1

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?

Authors: Number of MIPAS and SCIAMACHY measurements decrease significantly in 2012 due to the loss of Envisat. GOMOS data from year 2012 are not included in HARMOZ, because GOMOS experienced instrumental problems at that time. We explained this in the revised version (in the caption of Fig.1).

Other changes made in the revised paper and in the datasets

- A script for reading netcdf files also with IGOR Pro is added.
- Minor changes in file names are done (replacing underscores with hyphens etc), for full consistency with CCI guidelines
- Orbit_number is added to the list of GOMOS optional parameters, for consistency with other Envisat instruments
- Minor data issues are fixed in GOMOS, ACE-FTS and SCIAMACHY datasets
- DOI has been assigned to HARMOZ.