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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Measuring the Antarctic ozone hole with the new Ozone Mapping and Profiler Suite (OMPS)" *by* N. A. Kramarova et al.

Anonymous Referee #1

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Kramarova et al. provide an overview over the first measurements derived with the Ozone Mapping Profiler Suite (OMPS) which was launched in October 2011. Using the OMPS measurements Kramarova et al. provide an analysis of the 2012 Antarctic winter as well as a short overview over the data quality of the OMPS measurements by comparing these measurements to other available measurements from satellites and ozone sondes. The presentation of the first measurements with OMPS is important and since the paper is also generally well written it deserves to be published in ACP. However, in the present form the paper is neither a validation paper nor a detailed analysis of the Antarctic winter 2012. So, in the first place the authors should decide what the purpose of this paper is and then focus a bit more on the details. At the moment the paper just gives a rough overview and reads more like a conference proceeding

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paper than a paper in a refereed journal.

Some specific comments below:

Title: Validation analysis as well as the analysis of the 2012 Antarctic winter should also appear in the title.

P26206, L4: Why can you get a more detailed view on the Antarctic ozone hole with OMPS than ever before? What is the difference between OMPS and other instruments? Why is OMPS better?

P23606, L11: From the abstract it becomes not clear if you present a validation study in this paper or if it has been done previously and presented in another paper. Please change the text and be more precise.

P23607, L25: If the main focus is the validation of the OMPS data it should be named first. Otherwise the sentence should be rephrased. What actually is the main focus of the paper? At the moment both, the discussion on the Antarctic 2012 winter and the validation seem to be the main focus of this paper, but they are only superficially discussed.

P23608, L5: Add OMPS in brackets to the section title.

P26308, L6ff: What is the temporal resolution of the nadir and limb measurements? How many measurements/profiles are derived per day?

Section 3: Why has a three month average been used to validate the profiles by OMPS with other instruments? Generally for validation studies single profiles are used or if averages are used then on a shorter time period than three months. What does the validation of the profiles for the three month period say about the accuracy of the OMPS data shown as columns on a daily basis in figure 7? How accurate are the results presented there? This section should be improved so that it becomes clear what is the purpose of validation analysis and results presented in the paper and how can these be applied to the discussion of the accuracy and reliability of the results for

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the analysis of the Antarctic winter 2012.

P26311, L 5: Please motivate why this three month period is used.

P26312, L22: As mentioned in my general comment on this section. How can you judge from a validation performed of a profile averaged over a three month period that OMPS provides reasonable estimates of Antarctic ozone concentrations if you are later interested in these on a rather daily than 3-month basis?

P26311, L23: I would suggest changing the section title into: “OMPS ozone measurements of the 2012 Antarctic ozone hole – first results”

P26311, L24-P26312, L4: This text part still deals with validation matters and should be moved to section 3. As above the same question arises here: Why do you look at the agreement of the data on a monthly basis when you later use daily columns for the analysis?

P26312, L2: Higher than what? Please be more precise.

P26312, L8: Values of what? Please be more precise.

P26312, L21: Write “daily ozone values” instead of just “daily values”.

P26312, L14: write “downward trend in ozone” instead of just “downward trend”.

P26314, L11: write “size of the ozone hole appears” instead of just “size of the ozone hole”.

P26315, L4-5: You have done some kind of validation analysis, but you have not convinced me as a reader that the quality of the data is sufficient for studies on the Antarctic ozone hole.

P26315, L13ff: you are discussing the dynamics of the Antarctic winter 2012 in the conclusion, but in the paper now analysis on the dynamics has been shown. Are you referring to own studies on the dynamics or on studies which have been done by other

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groups and been published elsewhere. In the former case you should add more details on this analysis in the paper. In the latter case you should add the references.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 26305, 2013.