Answer to S. B. Andersen

We thank the reviewer for the valuable comments and for the time spent towards the improvement of the paper. We have replied to each of the comments in the order given by the reviewer. Please find them below.

GENERAL COMMENTS

Even if there are no results from the same years the relatively small inter annual variability in Antarctica still makes comparison relevant.

Indeed, there is no study available for 2005-2009 but there were obviously several in the past. We have modified Section 5 with a comparison with respect to previous works on earlier winters. Since the ozone loss values are not directly comparable due to differences in the loss estimation method and time, we have given weighting to the inter-annul variability part rather than the ozone loss figures. In addition, the prime goal is also to show its little inter-annual variation in this context.

The main conclusion is that there is small inter annual variability in both depth and loss rates as already concluded in the WMO reports. Thanks for mentioning this missing point.

I also find the discussion on trends somewhat weak and again I miss comparison with and references to other papers on the subject.

We have modified the Section 5 with a discussion on recent trends in ozone in the southern high and mid-latitudes.

The discussion on trends indeed is limited. Because, the main objective of this paper is the application of the passive method to the Antarctic total ozone measurements from ground and to demonstrate the ability of the ground-based network to follow further evolution of the ozone hole. Since the accuracy of the method depends heavily on the performance of the tracer simulations in CTMs, the long term evolution of total ozone is used for illustrating the consistency of the results and hence the method.

These are the reasons why we used total ozone to show the inter-annual variations and why we refrained ourselves from giving a thorough discussion on ozone trends. We agree that the heading was misleading and therefore, we have removed the term "trend" from it.

A brush up from some of the native English speakers among the authors would improve on the readability of the paper.

Done.

SPECIFIC COMMENTS

p. 7649 l. 6: 'The SAOZ observations are continuous throughout the winter':..This does not apply to all SAOZ stations in the analysis and definitely not to the Dobson and Brewer stations. It would be useful to have an overview of measurement periods in Table 1.

Yes. However, we are discussing about the measurements at Dumont d'Urville in this context, which are continuous throughout the winter. The general measurement period in winter for each station is given in Table 1.

p. 7649 l. 24:.'The sites well inside the vortex experience more loss than those at the edge. The loss at Concordia and Rothera is less than that of South Pole and larger than those of Dumont d'Urville due to the strength and longevity of the vortex over the respective locations. This does not seem to be true for all stations e.g. Faraday sees as large an ozone depletion as South Pole and Belgrano in 2007 according to figure 4 ?

When we look at the absolute loss (DU), it is true for some days. However, it is not true in general and also for the relative loss (%). We think, this point is more evident in the total ozone data showed in Figure 8. Nevertheless, in order to avoid confusion, we have reformulated the sentences and have omitted the comment about Faraday.

p. 7654 l. 17:. Figure 8 does not show a large increase in ozone loss. The figure shows total ozone and therefore a decrease in total ozone.

This has been corrected.

p. 7654 l. 17: Saturation of ozone loss is due to the fact that ozone is completely depleted at certain levels. Thus a levelling of in total column ozone may be is seen because there is no more ozone left to deplete. This is not the same as levelling of due to decreasing ozone depleting substances.

Sentence corrected.

p. 7654 l. 21. I don't see that figure 9 shows anything that might not as well be seen in figure 8? Also it is disturbing that the same stations have different colours in e.g. figure 8 and 9.

Figure 9 is removed. Colours are retained for respective stations.

p. 7656 l. 4. 'The groundbased measurements from AmundsenScott, Arrival heights, Belgrano, Dumont d'Urville, Concordia, Faraday, Halley, Marambio, Neumayer, Rothera, Syowa and Zhongshan show substantial loss in 2005–2009.' This is not surprising. It should be commented that this is in line with what would be expected from previous work by others.

Done. This part has been rephrased with relevant references.

p. 7656 l. 11 'The biggest advantage of the groundbased visible instruments (e.g. SAOZ) is the capability of measuring early winter ozone loss and thus covering the whole winter/ spring to enable the complete evaluation, whereas the satellite measurements start in spring only. this sentence does not belong in the conclusion. It is not new information that came out of this work. However a sentence in the end of the conclusion on how this work emphasizes the importance of GB measurements for early winter ozone loss and analysis of long term changes would be in place.

Conclusion has been changed.

Figure 4 and others: It needs to be explained what is used as reference for the percentage changes.

The percentage change is calculated as [100*(GB-Tracer)/Tracer]. It is stated in the text and in the figure captions.

TECHNICAL COMMENTS

South Pole and Amundsen/Scott are used inconsistently for the same station.

Corrected. Amudsen-Scott has been replaced with South Pole.

p. 7648 l. 16 (the first derivative of potential vorticity(PV)) change to (maximum first derivative of potential vorticity (PV))}

Changed.

p. 7649 l. 23 Remove 'As in the case of the time of onset'.

Removed.

p. 7655 l. 24 Replace 'cities' with 'stations'.

Replaced.