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Comment

***Interactive comment on* “Technical Note:
Continuity of MIPAS-ENVISAT ozone data quality
from full- to reduced-spectral-resolution operation
mode” by S. Ceccherini et al.**

S. Ceccherini et al.

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article

General comments

My main comment, however, is that the analysis has been performed on basis of a very limited dataset of MIPAS reduced resolution mode data especially produced for first quality checks and validation.

ANSWER: With regard to the main comment, the authors agree that the MIPAS re-
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duced resolution dataset considered in their analysis is not as large as desirable. The size of the dataset is constrained by the limited set of data analyzed by the European Space Agency for validation purposes. As a consequence, these are the only data currently available for comparisons. However, the differences observed for the bias and the precision (see Fig. 5 and Fig. 6) between full- and reduced-resolution MIPAS datasets are larger than their statistical uncertainties, thus showing the usefulness of the comparison.

The retrieval set-up (e.g. the microwindow selection) used for this dataset might not be identical to the one which will be used for the regular processing and which will be made public. Thus, I strongly recommend that the authors add more specific information on this topic at the end of the conclusion section where it is now only mentioned that the "spectral intervals for the reduced-resolution measurements could be reconsidered,...". If there is a decision on any "final" selection it would be preferable to show some comparisons between retrieval results of that compared to the one used for the current investigation.

ANSWER: The authors accept the recommendation of the reviewer to add more specific information on the above mentioned topic in the conclusion section. In particular, the results of preliminary tests suggesting the need to replace one of the ozone microwindows will be reported.

Further, the comparison for the MIPAS reduced resolution dataset has been made without distinguishing between the different measurements scenarios (nominal and utls-1). It would be interesting (if there are sufficient MIPAS/GOMOS co-incidences for both scenarios) to show the results separately.

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ANSWER: With regard to the suggestion made by the reviewer to show the results of different measurement scenarios separately, the authors decided not to implement this option, because unfortunately the statistics available for the nominal scenario is very poor.

Specific comments

p.801,l.17: Should be updated: isn't the MIPAS duty cycle now 100% ? (perhaps add the date related to this information).

ANSWER: MIPAS duty cycle has been actually gradually increased up to reaching 100% since December 1st, 2007. This information will be reported in the final version of the paper.

p.803,l.12: Could you add the information that only a sub-set of the grid-points of these microwindows is used for the retrieval.

ANSWER: We will add the information requested by the reviewer.

p.805,l.21: "The error estimation": can you specify whether this is the estimation of random errors since on p.810,l.8 it is mentioned that an estimation of GOMOS systematic errors is not available.

ANSWER: We will specify that in this case we refer to the random error component.

p.805,l.28: "The additional scintillation error seems to be overestimated in the GOMOS

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product used in this work". Can you give a reason for this statement?

ANSWER: Recent validation results (*Guirlet et al., Comparison of GOMOS Level2 products for measurements in close coincidence, Proceeding of Third Workshop on the Atmospheric Chemistry Validation of Envisat (ACVE-3), ESA/ESRIN, December 4 - 7, 2006*) and simulation (*Sofieva et al., Influence of scintillation on quality of ozone monitoring by GOMOS, Proceedings of the Envisat Symposium 2007*) have indicated that the current GOMOS error bars for ozone at 20-40 km seem to be (largely) overestimated due to overestimated scintillation correction error. A reference to Sofieva et al., 2007 will be added in the final version of the paper.

Technical corrections

p.800,l.22: "vibrational" → "ro-vibrational"

ANSWER: "vibrational" will be changed to "ro-vibrational"

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