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Atmospheric Chemistry and Physics Discussions

Interactive comment on "MIPAS: an instrument for atmospheric and climate research" *by* H. Fischer et al.

H. Fischer et al.

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The judgment of the paper by both reviewers was very positive. While reviewer 2 accepted the paper as it is, reviewer 1 has several comments. In the following we will respond to the comments of reviewer 1 (abbreviated R1)

1. General comments: Although the authors have concentrated on the MIPAS experiment itself the paper is already massive. Due to that reason it was not possible to put MIPAS in context relative to other remote sensing instruments. Such a paper could follow later.

Also, this paper covers mainly the first period of MIPAS measurements between March 2002 and March 2004 (full spectral resolution). AURA (with TES and MLS) was launched July 15, 2004, so that there is no overlap with respect to the data addressed

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in this paper.

Nevertheless, we have included a short paragraph in chapter 9 on TES, an instrument complementary to MIPAS with respect to tropospheric measurements.

For the same reason, it was not possible to put the scientific results of MIPAS into a wider context, e.g. by reviewing the progress made in the last years by the full suite of satellite instruments. We were even not able to describe all the interesting MIPAS results.

2. Specific comments: First of all we thank R1 for his effort to carefully reading the comprehensive manuscript and to make many proposals for minor corrections.

We have considered all the comments of R1 and mostly have improved the paper correspondingly. Two other cases will be commented in the following:

a) page 8829; oversampling and spatial resolution: The vertical resolution of a limb sounder depends on the vertical sampling, the FOV and the Signal-to-Noise-Ratio (SNR). The vertical FOV is not a limit of the effective vertical resolution. Provided vertical oversampling is associated with a good SNR the vertical resolution can be further improved (for MIPAS e. g. to 2.2km in special cases).

b) Chapter on Non-LTE effects: v or nu: We (as many other spectroscopists) use v; when talking about vibrational levels and the Greek nu; when talking about the emission arising from the vibrational levels.

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