

Response to the comments of Reviewer #1

We are glad to hear that the reviewer found the manuscript as a comprehensive document. The reviewer comments are given below in blue and our responses in black.

This manuscript describes a version 5 MIPAS ozone dataset for 2005-2012, as based on its optimized spectral resolution measurements. It is a comprehensive and very well written document. I recommend one addition. Please show one or more (daily or monthly), zonal-average pressure/latitude cross sections of day minus night (or vice versa) ozone (in %) for the stratosphere through lower mesosphere (your LTE region). I have not seen this kind of diagnostic in any previous publication about the MIPAS ozone dataset. Such a plot can be an important internal check about the registration of the radiance profiles and of the retrieved ozone and temperature profiles from this particular infrared, limb-emission experiment. If such diagnostic plots also look good, they would signal to me that your LTE ozone and temperature profile dataset must be of good quality. Of course, there will be more uncertainty for ozone in the upper mesosphere, where NLTE processes are important and where you must make use of unmeasured [O] and [H] distributions in your retrieval algorithms.

Even though the manuscript has already many figures, we have included an additional figure with zonal mean day-night differences of MIPAS O₃ for the four seasons. The reviewer suggested to show the differences only in the stratosphere and lower mesosphere, the LTE region, however, since the space required in the manuscript is the same we have shown the differences for the whole altitude of the retrieval. This gives a better overall view of the differences and might then be useful for more readers. In effect, the differences found in MIPAS are in line with previous measurements and current model predictions and hence render confidence on the good quality of MIPAS O₃ data. We have included a short paragraph just before Sec. 7.1 describing the figure and making that statement.