

## ***Interactive comment on “Nitrogen compounds and ozone in the stratosphere: comparison of MIPAS satellite data with the Chemistry Climate Model ECHAM5/MESSy1” by C. Brühl et al.***

### **Anonymous Referee #1**

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The paper is a nice assessment of the partitioning of the NO<sub>y</sub> family as represented in a state-of-the-art chemistry climate model compared to measurements from the MIPAS instrument. Even though the methodology is appropriate and the science sound the paper fails to condense the key findings into appropriate figures. I suggest the paper should be published subject to minor changes in how key results are presented.

Figure 1 is a nice overview as it is. Figure 2 makes the point described in the text well. Figures 3-6 are the problem. Presenting much more information than described in the text (not necessarily bad), but the main points about deficiencies and strength of the model compared to observations mentioned in the text are only very hard to

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judge. Even though it is tempting to present everything it might be actually better to assess two good and two bad examples showing the maps, scatter plot and PDF side by side for a particular species (one figure with 4 plots, e.g. model map, difference between model and MIPAS, scatter plot and PDF). This way the structure of the paper would improve working through one species at a time and the figures would be easier to appreciate. (The authors could even work their way through all species, but I don't think it is necessary for the story they are telling.)

Minor corrections and requests:

Abstract: "global charts" should read "global maps"

Page 9901, line 12: "the" nominal observation mode

Is the deficiency described on page 9903 last paragraph linked to problems with the phase of the QBO? I understand that the QBO is not nudged explicitly in this model?

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Interactive comment on Atmos. Chem. Phys. Discuss., 7, 9899, 2007.

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