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Atmospheric Chemistry and Physics Discussions

Interactive comment on "HDO measurements with MIPAS" *by* J. Steinwagner et al.

Anonymous Referee #2

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The paper describes observations of H2O and HDO, measured with the MIPAS instrument onboard ENVISAT. The data have been used to calculate the fractionation of water. These results give for the first time a global picture of H2O, HDO and its fractionation, and are therefore worth to be published.

I have only a few comments:

- The whole paper is dominated by details on the retrieval technique. I suggest that this part of the paper should be shortened. Most details can be found in the literature.

- SO2 is considered in the error calculation (Table 2), and the errors introduced by SO2 in Figure 4 are quite small. As far as I know, the spectral lines of SO2 are very uncertain in the spectral region where HDO is retrieved. How is it possible to give such an accurate error estimate if the lines are so uncertain? This needs to be discussed.

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- Figure 9 seems to indicate a clear minimum at 23 km, as also discussed in the text, but Figure 2 does not. THis needs to be clarified.

- In the bottom parts of Figure 1, 2, and 5 the main curve shows the average profiles, not the standard deviations. This is misleading in the captions and should be corrected.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 931, 2007.