

***Interactive comment on “High-precision isotope measurements of  $H_2^{16}O$ ,  $H_2^{17}O$ ,  $H_2^{18}O$ , and the -anomaly of water vapor in the southern lowermost stratosphere” by P. Franz and T. Röckmann***

**P. Franz and T. Röckmann**

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We thank the referee for his useful comments.

We will give the value of R(VSMOW) for oxygen rather than for hydrogen in the revised version.

Fractionation effects in the bubblers indeed do occur, but the fractionation constants are well known and are taken into consideration. More details on the calibration can be found in Franz (2005). This information and the reference will also be included in the

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final manuscript.

Regarding preflight preparations, the inlet lines of the sampler unit were heated and evacuated as mentioned on page 6, line 16. The aircraft inlet lines can not be heated, but are flushed with the dry nitrogen. This is unfortunate, but considering the high volume flow of  $\gg 100$  l/min through the intake lines, from which only a small fraction is sampled, any water desorbing from the walls of the inlet line would be highly diluted.

The IRMS relevant unit "Vs" has been removed and the sentence been rephrased in order to avoid confusion.

The discussion of the 3 parallel lines in figure 5 has been clarified to suggest that the stratospheric reservoir has not a uniform isotopic composition, but that the mixing processes during all flights are similar. This is a hypothesis based on our data, and we hope that this can be verified in future missions.

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Interactive comment on Atmos. Chem. Phys. Discuss., 5, 5373, 2005.

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