

## ***Interactive comment on “In-situ comparison of the NO<sub>y</sub> instruments flown in MOZAIC and SPURT” by H.-W. Pätz et al.***

### **Anonymous Referee #2**

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Intercomparing atmospheric measurement techniques under relevant ambient conditions is important for developing confidence in atmospheric datasets. This is especially true for the MOZAIC instruments, which acquire large datasets over extended time periods. This manuscript documents the intercomparison of two high-quality NO<sub>y</sub> instruments and, hence, is an important addition to the literature. The manuscript will be suitable for publication after the authors consider the following comments.

1) Perhaps the most important issue raised is the memory effect, which the FZJ instrument displays. This effect is now clearly demonstrated in the laboratory and in the atmosphere. Why isn't the memory effect seen on descent in this dataset? For example: (p661 In 1-3) the ETHZ instrument signal should decrease faster than the FZJ

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instrument in aircraft descents if the latter has a memory effect. What are the consequences of the observed memory effect for the interpretation of the long-term MOSAIC dataset?

2) How much of the NO<sub>y</sub> MOSAIC dataset has values below 0.3 ppbv, the minimum value observed on the flight? Are there any uncertainty issues likely to be different at values below 0.3 ppbv?

3) The authors are to be applauded for their transparency in showing the ETZH data reduced with the incorrect conversion efficiencies. However, I think it adequate to simply state that the data originally submitted was later adjusted by a common factor due to a recognized error and, thus, panel (a) of Figure 5 can/should be removed.

Smaller point:

According to the text, the large box in Figure 6 corresponds to rapid ascent data rather than data after a calibration.

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 649, 2006.

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