

Interactive comment on “Validation of water vapour profiles (version 13) retrieved by the IMK/IAA scientific retrieval processor based on full resolution spectra measured by MIPAS on board Envisat” by M. Milz et al.

Anonymous Referee #2

Received and published: 21 April 2009

This paper presents a thorough validation of the MIPAS version 13 H₂O dataset produced by IMK/IAA for the period September 2002 to March 2004 while the MIPS instrument was operating with full spectral resolution. Satellite, aircraft, balloon and ground-based instruments are used in the intercomparisons. The conclusion is that there is no discernible sign to the bias in the MIPAS stratospheric H₂O values. Other infrared instruments show closer agreement than in the microwave (which sense less H₂O than MIPAS) or the visible and UV (which sense more H₂O than MIPAS) indicating a possible inconsistency in the H₂O spectroscopy. This latter point is an interesting note and

C43

one that probably should be stated in the abstract. The paper is well presented and suitable for publication in AMT.

Questions, Minor corrections, Typos etc

Is the IMK/IAA data set available to general users? This is not indicated in the paper.

Did the authors consider comparing the MIPAS measurements of the overlapping parts of the ascending/descending orbit? This can provide a useful method to estimate precisions and reveal biases between ascending/descending retrievals.

A summary of the precision and resolutions of the data set must be given in the abstract.

Although stated in the title the abstract should also indicate that the time period covers the full spectral resolution operation of MIPAS.

p492 line 18 Replace "It needs about ..." with "The orbital period is about 100 min"

p500 line 27-28 ... assumed error seem[s] to be realistic.

p503 lines 3-4, p504 line 28 [in] the ... Hemisphere

p513 line 4 Due to small ... no [meaningful] statistical analysis ...

p515 line 1 Comparison to ESA [MIPAS] water vapor ...

p552 Table 1 Does the -ve sign indicate displacement towards the satellite for optically thicker limb paths?

Figures

A number of the figures have plot lines which overlap the legend. These are unsuitable for publication and should be replotted.

Interactive comment on Atmos. Meas. Tech. Discuss., 2, 489, 2009.

C44