

Interactive comment on “The STARTWAVE atmospheric water database” by J. Morland et al.

J. Morland et al.

Received and published: 3 February 2006

Technical Comments

Absorption models:

The Liebe (1989) and Liebe et al (1993) absorption models are used to model the relationship between brightness temperatures and ILW and IWV for the TROWARA instrument. In the case of the more recent ASMUWARA instrument, the Rosenkranz (1998) and Liebe et al (1993) models are used to model the absorption of atmospheric gases and clouds, respectively. These references have been added to the text.

pp 10854, L 19 and 20. 2.2 mm bias difference between TROWARA and radiosondes at 12:00 UTC:

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We believe that the large difference seen in July at 12 UTC is related to the effect of solar heating on the radiosonde sensor, which tends to cause a negative bias in the IWV. Guerova et al (2005) compared GPS data from Payerne with radiosonde data for the January 2001 to June 2003 period. On average, the radiosonde had a small +0.4 mm positive bias relative to the GPS during the 00:00 UT sounding but a larger negative bias of -0.9 mm during the 12:00 UT sounding. A similar effect was noted by Morland and Mätzler (2006) when they compared GPS data from Payerne with radiosonde data for the 2002 to 2004 period. In this case the average bias in the radiosonde data relative to GPS was only -0.3 mm in the winter months but was -2.8 mm in the summer months. We have modified the text to mention the solar heating effect and have added these two references.

Grammatical comments

pp 10854, L4:

We have modified the text according to the referee's suggestion.

Station co-ordinates:

We found it useful to remind the reader of the station co-ordinates (particularly altitude) when discussing the data.

Bern EXWI:

This is the name of the GPS sensor at Bern. EXWI stands for the building of Exakte Wissenschaften where the GPS and microwave sensors are located. We have produced a revised version of figures 7 and 8 without the EXWI abbreviation so as to avoid confusing readers.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 10839, 2005.

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