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## ***Interactive comment on “Water vapour total columns from SCIAMACHY spectra in the 2.36 $\mu\text{m}$ window” by H. Schrijver et al.***

**Anonymous Referee #2**

Received and published: 26 June 2009

### **General Comments:**

In this paper a novel approach to retrieve water vapour total columns from SCIAMACHY measurements is presented. Proper credit is given to related work, the retrieval method is clearly described, and a first comparison of the derived results with independent (ECMWF) data is performed. I was especially pleased to see some high-quality results derived from a spectral region which – at least for SCIAMACHY – poses several challenges on retrievals, as also described in the paper. The overall presentation (both text and figures) is very good, the paper is well structured, and the conclusions are concise and clearly formulated.

The paper fits well within the scope of AMT and may be published after some minor

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corrections addressed below.

### Specific Comments:

1. p. 1460/1461:  
The method to derive a time dependent extended slit function is based on SLS measurements. It is known from from e.g. Lichtenberg et al. (ACP 2006) that the SCIAMACHY SLS is affected by blocking. How does this affect the slit function, and has this been considered in the retrieval?
2. p. 1461, line 19:  
Where is the surface pressure taken from? ECMWF data?
3. p. 1466, line 12–15:  
Is it possible to validate spectroscopic data by a retrieval? I would suggest a different formulation, like:  
'The SCIAMACHY atmospheric measurements support the quality of the new spectroscopic water vapour data (Jenouvrier et al., 2007) which result in an improved agreement between the retrieved water vapour total columns and the values derived from ECMWF data.'

### Technical Corrections:

1. p. 1457, line 25: measuremed → measured
2. p. 1461, line 14: remove comma after 'clouds'

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Interactive comment on Atmos. Meas. Tech. Discuss., 2, 1453, 2009.

C351

AMTD

2, C350–C351, 2009

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