

Interactive  
Comment

## ***Interactive comment on “Water vapor retrieval from OMI visible spectra” by H. Wang et al.***

**R. Lindstrot**

rasmus.lindstrot@wew.fu-berlin.de

Received and published: 4 February 2014

Dear authors,

I think you present an interesting application of OMI measurements. Nevertheless, I'd like to make a few general comments:

1. It would be beneficial to take a definite decision on which units to use and stick with it throughout the paper. It's hard for the reader to convert from molecules/cm<sup>2</sup> to cm and back again.
2. In the introduction you are giving an almost complete overview of different methods and instruments used for space-borne remote sensing of water vapour. In the near infrared, you shouldn't leave out MERIS which provides well calibrated NIR

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



channels that are successfully used for the retrieval of columnar water vapour (Lindstrot et al, 2012). What about GNSS radio-occultation?

3. You use the MODIS NIR retrieval to validate your OMI retrieval. I wonder, whether this is a good choice for two reasons:
  - (a) Over ocean, the MODIS NIR retrieval generally is not a well suited reference since the dark ocean surface simply inhibits a total column retrieval, resulting in large uncertainties.
  - (b) Over land, MODIS data surely is a treasure. However, I am not sure whether the retrieval algorithm has been thoroughly validated, maintained and kept up to date over the course of the past decade.

We have generated a combined data set of MERIS and SSM/I measurements of water vapour, which is freely available via <http://globvapour.info/> (more information available in Lindstrot et al, 2014). Using this dataset will overcome both of the above weaknesses of the MODIS dataset.

#### References:

1. Lindstrot, R., Preusker, R., Diedrich, H., Doppler, L., Bennartz, R., and Fischer, J., 2012: 1D-Var retrieval of daytime total columnar water vapour from MERIS measurements, *Atmos. Meas. Tech.*, 5, 631-646, doi:10.5194/amt-5-631-2012.
2. Lindstrot, R., Stengel, M., Schröder, M., Fischer, J., Preusker, R., Schneider, N., and Steenbergen, T.: A global climatology of total columnar water vapour from SSM/I and MERIS, *Earth Syst. Sci. Data Discuss.*, 7, 59-88, doi:10.5194/essdd-7-59-2014, 2014.