Atmos. Meas. Tech. Discuss., 8, C3476–C3478, 2015
www.atmos-meas-tech-discuss.net/8/C3476/2015/

Atmospheric Measurement Techniques Discussions

Interactive comment on "Estimating of total atmospheric water vapor content from MSG1-SEVIRI observations" *by* A. Labbi and A. Mokhnache

Anonymous Referee #2

Received and published: 23 October 2015

1. According to some papers, the TIGR profiles contains some cloudy cases. I suggest the authors to confirm that. If some cloudy profiles indeed exists, you have to remove them from your used profiles. see: Wang, N., Li, Z.-L., Tang, B.-H., Zeng, F., & Li, C. (2012). Retrieval of atmospheric and land surface parameters from satellite-based thermal infrared hyperspectral data using a neural network technique. International Journal of Remote Sensing, 34, 3485-3502 Wu, H., Ni, L., Qian, Y., Tang, B.-H., & Li, Z.-L. (2013). Estimation of atmospheric profiles from hyperspectral infrared IASI sensor. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 6, 1485-1494

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

2. Compared to the work of Schroedter-Homscheidt et al. (2008), what is the improvement of your method? In the comparison part, the author wants to show their better results than Schroedter-Homscheidt et al. (2008). so I think the validations should also contain the results from Schroedter-Homscheidt et al. (2008). like figure4 and 5.

3. I think that Eq.(6) should be dependent on the viewing zenith angle than can improve the accuracy.

4. An important assumption for the AERONET observations is that the atmosphere is horizontally uniform and the observation data in the off-nadir direction can be converted to nadir observations. However, this assumption is less reliable if clouds exist in the nadir and/or off-nadir directions or if the spatial variation of the atmospheric conditions is signiïňĄcant, particularly for the observations at large zenith angles. Besides, the viewing direction of SEVIRI may be totally different from that of the CE318 in the AERONET program. in this case, uncertainty is inevitable. I suggest that the authors should give same disscussion about this topic. The following papers may be useful. Besides, soom references should be added about the AERONENT in section 2.2. Ren, H., Du, C., Liu, R., Qin, Q., Yan, G., Li, Z.-L., & Meng, J. (2015). Atmospheric water vapor retrieval from Landsat 8 thermal infrared images. Journal of Geophysical Research: Atmospheres, 120, 1723-1738 Ichoku, C., Levy, R., Kaufman, Y.J., Remer, L.A., Li, R.-R., Martins, V.J., Holben, B.N., Abuhassan, N., Slutsker, I., Eck, T.F., & Pietras, C. (2002). Analysis of the performance characteristics of the five-channel Microtops II Sun photometer for measuring aerosol optical thickness and precipitable water vapor. Journal of Geophysical Research: Atmospheres, 107, AAC 5-1-AAC 5-17 Liu, C., Li, Y., Gao, W., Shi, R., & Bai, K. (2011). Retrieval of columnar water vapor using multispectral radiometer measurements over northern China. Journal of Applied Remote Sensing, 5, 053558-053558-053512

5. In section 4.2, "(2) the input brightness temperatures with a variation larger than approximately 5 K during the daily cycle" . There may be a long time interval (several hours) between two observations with brightness temperature difference up to 5K. As

AMTD
8, C3476–C3478, 2015

a result, the atmopsheric water vapor has changed remarkably, and then the proposed work does not work. Please give more discussions.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 8903, 2015.