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Comment

Interactive comment on “Analysis of the application of the optical method to the measurements of the water vapor content in the atmosphere – Part 1: Basic concepts – the measurements of the water vapor content in the atmosphere with the optical method” by V. D. Galkin et al.

Anonymous Referee #1

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I did not get a response from the authors concerning my initial review comments. Thus it is not motivating to make a second review.

Generally I think the results and the topic (absolute calibration for time series of water vapour column) are very important. It is very good that the authors document details

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of the technique and the retrieval. However the presentation has to be revised before publication in AMT.

Points for improvement:

- 1) There are many studies on the measurement of water vapor columns recently published e.g., FTIR instruments of P. Demoulin or R. Sussmann and microwave radiometer of J. Morland. Since these articles are not mentioned by the authors, I conclude that they are not informed about the state of research. However it is important that the authors relate their measurement technique to other measurement techniques in the introduction and maybe later in the trend analysis.
- 2) Water vapour columns from radiosondes and/or ECMWF reanalysis might be shown for intercomparison in Fig.6
- 3) The title of the article can be shorter: e.g., ": Part 1 Basic concepts of the measurement technique"
- 4) The usage of the terms standard deviation, accuracy and uncertainty is not clear enough. The authors should explain in the beginning how accuracy, uncertainty and so on are defined. Example: line 15 in conclusions: "If the absolute humidity in the 15 cell were known with the uncertainty of 1% or less, then provide accuracy of 1%" Are accuracy and uncertainty the same? If yes, then you don't have to use both terms since it makes the article unclear.
- 5) How about systematic errors or biases? In addition, there can be systematic errors in the water vapour time series because of bad weather periods. This problem should be discussed too.
- 5) Figure 1c is without y-scale
- 6) Unit "cm ppw" is only used by the authors and by nobody else in the world. AMTD certainly recommends SI units I guess.

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7) axis numbering of many figures (e.g., Fig 2-4) is too small

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Interactive comment on Atmos. Meas. Tech. Discuss., 3, 5705, 2010.

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