

***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 #2**

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A major issue concerns the accuracy of the method. The authors suggest an improvement by a factor of 10 (!!). In order to do this, one needs very accurate photometric data which is not an easy task. Millimagnitude accuracy is feasible but it is not a trivial procedure. One may reach such accuracy in a single night but repeatability is also

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of great concern. It is clearly connected to the properties of the observation site. By the way, are there any data related to the seeing conditions at the observatory ? Fig. 2 shows a very narrow star-photometer curve. Please state clearly the nature of the filters used in the observations. Interference or none interference filters ? If the former (most likely), then their dependence on temperature may be significant since observation temperatures will differ from the usual curve of e.g. 20 degree Celsius usually quoted by the manufacturers. What are the temperature boundaries (min-max) during the observations over months-years ? In addition, is the star light beam collimated ? Non zero angles of incidence do alter the filter curve. Fig. 5 quotes extremely small uncertainties in C and mo which clearly do not fit the scatter seen in the data. I wonder what do these uncertainties represent. Please clarify. The red colored straight line is a bit offset at low x values. Why did the software peak up a smaller slope , how does it weigh the data ? I would propose to omit points with x greater then 4.0, redo the fit and quote acceptable errors on the parameters through a chi-square fit or similar method.

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

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