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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Improved total atmospheric water vapour amount determination fromnear-infrared filter measurements with sun photometers" *by* F. Mavromatakis et al.

Anonymous Referee #2

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The paper presents computations of the out-of-band leakage effect on the retrieval of precipitable water amount from sunphotometer measurements. The paper is interesting and I support publication. I would like to make a few suggestions the authors might consider taking into account.

Long time ago my paper on a similar subject got rejected by a different journal on the grounds of being not practical. I disagreed but did not fight back because of a number of reasons and circumstances. I think this paper is very practical, but:

1. I wonder how typical is the problem, what is the rejection rate of the state-of-the-art interference filters. Also how OOB affects other channels used for aerosol optical

depth determination and what blocking is sufficient in that case. I wonder if the authors would consider adding a paragraph where they show how out-of-band leakage can affect Langley plot and corresponding calibration constants and aerosol optical depth computations. What is the percentage of the extra light in the total signal?

2. I think some papers published previously should be acknowledged, e.g. M.A.Box, Applied Optics, 20, 2215-2219, 1981; R.E.Basher and W.A.Matthews, J.Appl.Met. 16, 795-802, 1977; Y.V.Villevalde, V.M.Volgin, and K.S.Shifrin, Soviet Meteorology and Hydrology, N6, 116-120, 1988. To some extent they all contributed to the subject considered.

3. I do not quite agree with the authors on the necessity of using exact site's altitude because the uncertainty in the coefficient computations associated with the model uncertainty (US standard, Tropical etc.) is very close to the dependence on site altitude. However, if any additional information on atmospheric profiles is available it is worth of taking exact site's altitude into account.

Overall I am very positive about the paper and think it will provide very useful reference point.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6113, 2007.

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