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Atmospheric Measurement Techniques Discussions

Interactive comment on "Comparison of GOME-2/Metop total column water vapour with ground-based and in situ measurements" *by* N. Kalakoski et al.

Anonymous Referee #1

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The manuscript describes the validation of the improved GDP v4.7 operational retrieval of total column water vapour from GOME-2 using radiosonde observations and ground-based GPS retrievals. The validation concentrates on the calculation of the relative differences of the total column water vapour retrievals and the interpretation of the dependencies of these differences is done by means of the median and some percentiles (5th, 25th, 75th, and 95th) of the distribution.

The topic is well suited for publication in AMT, especially in the special issue. However, relevant literature in AMT (even of the same SI) is completely ignored. Confronting the findings with the ones obtained in these papers/manuscripts is really necessary and

will help to solve some remaining open questions in the manuscript.

The language and style should also be improved. There is a mixing up of the important terms "comparison" and "validation". A more detailed description, including the accuracy estimates, of the reference data sources (radiosondes and GPS) is also needed. Identical formulations are repeated shortly after each other, and some awkward phrasing should be replaced. The use of "the" and "a" is often inappropriate or these article words are missing. The important "Results and Discussion" section needs some restructuring.

Taking these considerations into account, I believe the paper can be accepted for publication after a major revision by the authors. I think that the paper can greatly be improved with the suggested supplementary comparison of the findings with other studies and proposed corrections (in the supplement) and I am willing to review it anew afterwards. The core of the research is very interesting and well established, but there is a need to dig a little deeper and add some perspective to the work by comparison with the literature.

Please also note the supplement to this comment:
http://www.atmos-meas-tech-discuss.net/7/C4805/2015/amtd-7-C4805-2015-supplement.pdf

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 12517, 2014.