

Interactive comment on “The GEWEX Water Vapor Assessment archive of water vapour products from satellite observations and reanalyses” by Marc Schröder et al.

Anonymous Referee #2

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This impressive paper provides a great deal of detail on observations and data assimilation products from which total column water vapor as well as vertical profiles can be obtained. It will be an outstanding and very useful reference for researchers interested in evaluating and intercomparing estimates of water vapor in the troposphere. I couldn't tell whether the stratospheric water vapor estimates were treated as comprehensively; they are less familiar to me and I may have failed to fully grasp some of the details.

The paper is well written for the most part, but is a bit uneven in some spots; for example, the data record descriptions in section 4.1 appear to have been pasted together from individual contributions without any linking overview. In a few other spots, there

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are typos and language errors that should be fixed, for example in the first paragraph of section 4 (bottom of page 8). I think that the manuscript will benefit from a careful reading and editing, but these are small points that do not impact the general merit of the paper.

I applaud the opportunity for the authors to publish such a paper, which will make the wide range of water vapor information products much more accessible than would otherwise be the case. I have had the impression that the most usable such products for studies of climate variability, and to some extent change, were those derived from data assimilation systems, since all of the satellite observations and estimates are significantly biased in their sampling - IR products can't see into or below clouds, microwave products are challenged over land and ice, near IR and visible products tend to be daytime only - and therefore the integrated analyses formed from them have relatively poorly known biases. Of course, since the reanalyses attempt to use these estimates and are themselves challenged by biased input, my inclination to favor them may be faulty as well.

One great benefit of this paper will be to provide scientists with the raw material that will enable them to do a much better job of untangling the errors and uncertainties in the estimation and analysis of water vapor. The great significance of water vapor to tracking and understanding climate change, as well as climate variability on shorter time scales, makes this a very important task greatly facilitated by this paper and the availability of the datasets described. I compliment the authors on a challenging task well done, and I recommend publication.

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