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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Technical Note: New ground-based FTIR measurements at Ile de LaRéunion: observations, error analysis, and comparisons with independentdata" *by* C. Senten et al.

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The paper "Technical Note: New ground-based FTIR measurements at Ile de La Reunion: Observations, error analysis, and comparison with independent data" by C. Senten et al. reports on first data from FTIR measurements at southern hemispheric (sub) tropical latitudes taken during two campaigns in 2002 and 2004. The uncertainties of the measurements are discussed in detail and the data set compared to the few other measurements available at these latitudes. One interesting point about the measurements are simultaneous observations from a coastal and a high altitude site

in 2002 which facilitates direct extraction of the column amounts of various trace gases between the two measurement locations.

In the public discussion, the paper was criticized strongly by one of the reviewers, followed by a very short but negative review, a more detailed and positive review and a somewhat heated public debate with contradicting opinions. After having received a revised version of the manuscript, I have decided to accept it for publication as a technical note in ACP in spite of the reviewer comments for the reasons detailed below.

The main criticism of reviewer #2 is that the paper does not contain enough new science to merit publication in ACP, even as a technical note. Clearly, the paper does not put forward any new scientific ideas but rather describes in detail a new data set and its uncertainties. If the measurements would have been taken in Europe, I would have agreed with the reviewer that they do not provide anything beyond the state of the art. However, the location of the measurements makes this data set relevant for many applications (mainly validation of satellite measurements and model runs) as very few measurements exist in the southern hemisphere at low latitudes. For such applications, a detailed discussion of the errors is needed as well as a comparison to other data, and this is what the manuscript provides. I personally would have preferred a paper where the data is not only presented but also used to improve our understanding of physical and chemical processes in the atmosphere, but feel that the manuscript is still useful in the present form.

A second criticism was that the data shown is already used in ACE validation papers, and the current manuscript therefore represents a case of duplicate publication. This is a serious allegation, but in my opinion is not fulfilled in this case. In the ACE validation papers, very little detail is given on the (many) validation data sets used as the focus is on the accuracy of the ACE measurements. In fact, I would argue that using the measurements from the FTIR instrument on Ile de La Reunion for satellite validation without reference to a paper such as the one of Senten et al. is questionable as the uncertainties of any validation data set has to be well established.

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A third point raised is that the paper is not appropriate for publication in the ACE validation issue. I would agree and have to apologize to the authors as they had requested me to remove it from the ACE validation issue prior to publication on ACPD but at that time I felt this was not important and didn't follow their request. This will be rectified for the final paper.

There also were several important comments on the contents and in particular on the treatment of the errors introduced by interfering species. These have been addressed by the authors who have adopted the approach suggested by the anonymous reviewer and Tobias Bosdorff and changed their manuscript according to the suggestions made. I think that this is an illustration of how (public) peer review helps to improve scientific work which would not have been the case if the authors had followed the advice of reviewer #2 and posted the document as technical note on their web page.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 827, 2008.