

Interactive comment on “Detection of organic compound signatures in infra-red, limb emission spectra observed by the MIPAS-B2 instrument” by J. J. Remedios et al.

Anonymous Referee #2

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The paper reports interesting and new remote sensing observations of trace gases in thermal emission from balloon borne observations. The spectra and analysis method reveal a convincing evidence for the detection of the compounds in the atmosphere. The paper is appropriate for ACP, but I have a few comments.

So far, the results presented are sufficient for a spectroscopic journal, but for ACP I would like to some kind of geophysical interpretation, which might be possible with the data set. I would like to see the retrieved profiles as Figures from the lowest detection altitudes upwards, may be up to the tropopause. The quality of the residuals suggest that the concentrations of the trace gases can be retrieved for a few more altitude steps.

**Interactive
Comment**

For midlatitude conditions I assume that the profiles can be retrieved up to 15 km. This would make the paper more interesting, allow a much better discussion with literature data, and enable others to use the data.

I do not see why the balloon-borne observations confirm that concentrations of this gas are likely to be measurable in the free troposphere. The balloon-borne spectra are recorded at an altitude of 7.5 km or 10.4 km, the free troposphere includes also the altitude region below, and the studies of the authors indicate that observations at lower altitudes are not possible.

The title should contain the word balloon, to distinguish it clearly from the MIPAS satellite instrument, the abbreviation -B2 is not sufficient.

Why did the authors use the HITRAN 2000 database, and not HITRAN 2004?

I do not see the advantage of using the Norton-Beer strong apodisation, except of creating smooth spectra. The apodisation chosen decreases the resolution to half of its original value. A short clarification would be useful.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 10021, 2006.

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