

***Interactive comment on “Analysis of the chemical composition of organic aerosol at the Mt. Sonnblick observatory using a novel high mass resolution thermal-desorption proton-transfer-reaction mass-spectrometer (hr-TD-PTR-MS)” by R. Holzinger et al.***

**Anonymous Referee #2**

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The authors describe the application of a new high mass resolution thermal desorption proton transfer reaction mass spectrometer (hr-TD-PTR-MS) for the analysis of the chemical composition of the organic aerosol fraction at Mt. Sonnblick observatory in the Austrian alps in summer 2009. A tremendous number of  $m/z$  signals in the mass range of about 20 to 400 were detected. The discussion of these peaks in connection with the elemental composition of the aerosol or in connection with the thermograms produced by the instrument represent the central part of the paper. Since in my opinion

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the analysis and chemical characterization of the atmospheric organic aerosol fraction is an interesting and important research field, I consider the paper appropriate to be published in ACP. However, at the same time I suggest major revisions.

My major concern is the complexity of the paper. In my opinion the average reader of ACP expects papers in ACP discussing for example the chemical composition of organic aerosols in connection with certain atmospheric-chemical (or physicochemical) processes (source discussions, aging etc. etc.). However, this paper has a strong focus on instrumental details and developments. I am afraid that an average reader is simply distracted by the wealth of very specific mass-spectrometric information about data processing, mass scale calibration, peak detection routines and peak list definitions. As a consequence, interesting information and discussions, e.g. the discussions of the thermograms in connection with the chemical composition of OA, is virtually concealed. My recommendation would be to sharpen the focus of the paper on the chemical analysis of OA and to move the specific mass-spectrometric aspects (perhaps the whole part 3) to the supplementary information. The authors might also consider the possibility to make a separate paper out of this material (e.g. for AMT).

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