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Atmospheric Measurement Techniques Discussions

Interactive comment on "Development and characterization of a High-Temperature Proton-Transfer-Reaction Mass Spectrometer (HT-PTR-MS)" *by* T. Mikoviny et al.

Anonymous Referee #3

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The paper by Mikoviny et al. describes further development of proton-transfer-reaction mass spectrometry technique. The main focus of the study was to reduce instrument response time for targeted "sticky" compounds. The ability to detect these species on-line is certainly a great advantage, especially with a growing interest among atmospheric community to characterize the partitioning of organics between aerosol and gas phases. The authors provide the details of the new drift-tube and inlet design. The paper is well-written and the experimental results suggest that for certain compounds the instrument response times are significantly improved compared to traditional method. I recommend this paper for publication in *Atmos. Meas. Tech.* with minor corrections.

Specific comments/technical corrections

P. 191, line 3: I find it very useful that the authors give the reagent ion counts along with O_2^+ counts. Please also provide typical water dimmer counts at m/z 37.

P. 191, line 9: The authors stated that 'the quadrupole mass spectrometer was optimized for the detection of high m/z-signals'. It would be useful to get a very short description of this procedure.

P. 192, line 8: The authors mention in the paper that high temperature (200°C) is the reason for higher fragmentation. In this case it is useful to look more carefully at fragments. Hexanal fragment at m/z 83 is accounted for but how about decanal fragment? If parent ion m/z 157 expels water then it might be useful to look at m/z 139. Please comment.

P. 193, line 1-12: Perhaps this paragraph is the weakest part of the paper as it discusses a relatively high background signals for low m/z peaks. Please give an idea of where this background is coming from. Maybe from the new materials that were used for the drift-tube construction? Also describe the way your background was measured.

P. 193, line 7: 'These are, however, not the target analytes of a HT-PTR-MS instrument.' This sentence is somewhat confusing as later on the results are given for m/z 18,62,79.

P. 194, line 16: Ammonia measurement is very interesting. Do you see any problem with huge intensity at neighbouring m/z 19 peak?

P. 202, Fig.4: Mention in the caption that m/z 85 is the fragment. Clarify in the text why you pick m/z 85 fragment as levoglucosan marker and not the parent ion.

Interactive comment on Atmos. Meas. Tech. Discuss., 3, 185, 2010.