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Atmospheric Measurement Techniques Discussions

Interactive comment on "Measuring acetic and formic acid by proton transfer reaction-mass spectrometry: sensitivity, humidity dependence, and quantifying interferences" *by* M. Baasandorj et al.

Anonymous Referee #1

Received and published: 2 December 2014

This manuscript details excellently the issue surrounding detection of formic acid and acetic acid with the PTR-MS ion chemistry. It is increasingly becoming clear that the secondary sources of these two species remains somewhat elusive and more field measurements are necessary to improve our understanding. The authors present in a very clear and detailed manner laboratory and field work that is essential to applying the PTR technique to the quantitative measurement of these species. I believe this work will be enormously useful to members of the large community of researchers currently using PTR-MS instruments. Barring a few minor comments I highly recommend

this work for publications in AMT.

Minor comments and corrections:

page 10889, section 2.1: Although the authors point to another manuscript for details on the inlet, due to the discussion here about memory effects it is necessary to give the reader a few details on the inlet used (e.g. tubing size, flow rates, length) such that a residence time can be calculated easily.

page 10895, line 21: i believe you should add the words "lower degree of" before fragmentation.

page 10899, line 15: I do not understand how the authors can state that PAA will go mostly to AA-H+ if the standard available itself contain AA. It seems to me that as these are inseparable then no conclusions could be made.

page 10900, line 21: The authors should clarify that the reason they did not quantify DME is due to the problems with quantifying the standard not in using a catalyst to acquire an instrumental background as is often used in PTRMS.

page 10901, line 25: put m/z in front of 79 for consistency.

page 10903, line 20: Again how can you quantify the retention of PAA if it is detected mostly as AA-H+ and the PAA standard contains AA?

page 10904, line 6: What was your typical H3O+:H2O-H3O+ ratio since we are thinking in terms of your previous figures.

page 10907, line 4: I believe this sentence is missing a word and needs to be rewritten.

Figure 5: I would suggest moving the RH% legend out of the graph panel and into the general open space to make it more visible. Same for Figure 6.

Figure 10: There is so little ambient data shown in Figure 10. As a reader I would like to see more instances of this especially with additional ambient structure that you

discuss in the manuscript. The data here looks like it could be laboratory standards. In putting this into practice it would benefit the reader to see more continuous data here.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 10883, 2014.