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Atmospheric Measurement Techniques Discussions

Interactive comment on "Calibration and intercomparison of acetic acid measurements using proton transfer reaction mass spectrometry (PTR-MS)" *by* K. B. Haase et al.

Anonymous Referee #2

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This paper reports on the calibration of three different PTR-MS systems for acetic acid. The data are useful and of interest to the scientific community. I recommend publication after minor revisions.

The range of calibration factors (7-10.9) is mostly due to the relative fractions at m43 and m61. When taking into account the signals at both masses the calibration factors fall into a much narrower range. This should be pointed out. The remaining differences are probably due to differences in the MS transmission characteristics.

The discussion is limited to reporting calibration factors. However it would be interest-

ing to explore if this is in agreement with the reaction rate constant and the kinetics in the drift tube! This could be done, for example, according to the method described by Holzinger et al. (Atmos. Chem. Phys., 10, 2257–2267, 2010). They also show a transmission curve which can be used as default if the transmission characteristics of the PTR-MS systems are not available. Whether the higher sensitivity at lower E/N values is merely due to the changed kinetics in the drift tube, or if other processes play a role, should be discussed by such an analysis as well.

Minor/technical remarks:

Page 4640, line 10: Lee et al. (2006). . .

4642, 6: correct sentence 'The primary. . .'

4643, 9: report ID rather than OD

Fig 1 caption: Delete sentence 'The regular. . .'

Fig 4: It is very hard to distinguish between acetic acid and acetonitrile. I suggest to present the same 1-hr acetic acid style as in the other three ccharts.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 4635, 2012.