

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 #2

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General comments:

Mikoviny et al. presented a new instrumentation based on proton-transfer-reaction mass spectrometry that will eventually be used for aerosol measurements. The idea, construction, and characterization of the instrument are described in detail and the paper is generally well-written. I believe the paper would make great contribution to Atmos. Meas. Technol., and recommend publication after consideration of the minor/technical issues listed below. I hope my comments help the authors improve their manuscript.

Specific/technical comments:

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Page 190, line 6: As far as I read, the authors first produced dry zero air and then humidified by a water bubbler. This sentence should start with "dry zero air" rather than "humidified zero air".

Page 190, line 9: What is humidity range? Is this variable or fixed? Please clarify.

Page 190, line 22: The authors should state what compounds correspond to 20 ms to 1 s, respectively.

Page 191, line 9: How the authors improve the detection efficiency at high-m/z region? Please add more details.

Page 192, line 20: "oxygenated VOCs" should be more specifically compound names. In our experience, acetone has humidity dependence in sensitivity, likely due to differences in reaction rates with H_3O^+ and $\text{H}_3\text{O}^+(\text{H}_2\text{O})$. Don't you see any dependence in your experiments?

Page 193, line 10: The authors noted the signal at $m/z=106$. What could this "even number" be?

Page 193, line 19: The authors stated that standard PTR-MS instruments have a response time of approx. 0.15 s for pure hydrocarbons. Is this the case with 1/16-inch heated silico-steel tube that is used for recent Ionicon instruments or without a heated inlet? For what hydrocarbons? Please clarify.

Page 193, line 27: The authors stated here "published and unpublished". Please add appropriate references for published data.

Figure 2: What x- and y-error bars represent for? Sensitivities should be associated with +/- 95% confidence limit.

Figure 4: It is difficult to distinguish between vertical dotted lines. They can be shown in different colors, i.e., in black, red, and green.