Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2017-103-RC1, 2017

Atmospheric Measurement Techniques Discussions

Interactive comment on "Observations of VOC emissions and photo chemical products over US oil- and gas-producing regions using high-resolution H_3O^+ CIMS (PTR-ToF-MS)" *by* Abigail Koss et al.

Anonymous Referee #1

Received and published: 8 June 2017

Koss et al. present a comprehensive data analysis of their series of airborne observations over US oil- and gas- producing regions. Since the ToF technology introduced to PTR applications, it has been highlighted as a main technological breakthrough to expand analytes to be quantified by taking advantage of high mass resolution. However, as far as I can tell, there has not been much of studies to comprehensively examine a wide swath of detected compounds. In this sense, Koss et al. present a very well-motivated study. The result and discussion section is quite lengthy for a good reason. It goes over a number of un-identified or under studied peaks on PTR-ToF-MS spectra

and discuss comprehensive details on its potential sources and artifacts. I strongly believe that the findings and discussion in the manuscript will be greatly beneficial to the PTR-ToF-MS user community. I have few minor comments and suggestions on the manuscript as described below.

1) It would be beneficial to include correlation plots for the chemical species overlapping PTR-ToF-MS and Whole Air-GC datasets especially species such as benzene and toluene.

2) Page 15 Line 457 – 464: I know that this manuscript tries to describe mainly technical aspects but it would be helpful to describe little further what 'photochemistry' is 'low' and 'high' means.

3) Page 19 Line 543: MEK is also known for a solvent so is there any possibility that it may come from direct emission?

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-103, 2017.