

Interactive comment on “Non-methane organic gas emissions from biomass burning: identification, quantification, and emission factors from PTR-ToF during the FIREX 2016 laboratory experiment” by Abigail R. Koss et al.

Anonymous Referee #2

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Journal: ACP Title: Volatile organic compound emissions from biomass burning: identification, quantification, and emission factors from PTR-ToF during the FIREX 2016 laboratory experiment Author(s): Abigail R. Koss et al. MS No.: acp-2017-924 MS Type: Research article This work presents a comprehensive method to detect NMOGs released from laboratory simulated wildfires. The authors used different methods in parallel or in series with the PTR-ToF-MS to determine in confidence the emission ratios for different NMOGs from biomass burning. The paper is very well written and it shows an impressive amount of experimental work. Although the paper is more suit-

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able to be published in Atmospheric Measurement Techniques however minor edits are required to be addressed by the authors before it is suitable to be published in ACP

1) Page 1, lines 29-31: the authors state that HCN is a compound that is not measured by PTR. A number of papers in the literature have already reported measurements using PTR-MS which the authors did not reference (Knighton et al 2009, Ambrose et al 2012 and Moussa et al 2016). In page 14, lines 428-430 with HCN proton affinity is very close to that of water did the authors use any RH correction when using FTIR to get sensitivities? How did the HCN sensitivity obtained from the FTIR method compare to the sensitivities of the other studies mentioned above? 2) Page 4, lines 115-116 what is the criterion that the authors used in order to divide stacks for different instruments? Is it based on fuel? Or did they select random stacks to test other techniques? 3) It was not clear throughout the paper if the authors did the corrections and calculations for emission factors for all the NMOGs from the different fuels using the different techniques 4) Page 8, lines 261-263 are the calculated and measured calibration factors in figure 1 obtained from this study or from literature it was not clear from the text 5) Page 11, lines 330 to 344 it is not clear why the authors used pyroles and butane nitrile as an example 6) Page 12, lines 386-393 the authors started the paragraph with as shown in the Supplementary information, where exactly in SI? 7) Page 13, line 395 I think the authors meant monoterpene fragment and not isoprene fragment (C₁₀H₁₆OH⁺)

Overall a very good paper and I recommend its publication in ACP after the authors address the aforementioned comments

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