

Interactive comment on “Laboratory measurements of trace gas emissions from biomass burning of fuel types from the Southeastern and Southwestern United States” by I. R. Burling et al.

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Response to anonymous referee #1

We thank referee 1 for the positive comments and detailed suggestions. We will address all referee 1's comments as shown below.

RC - Comments: 2.3 Open-path Fourier transform infrared spectrometer details Page 16433, lines 12-14 – Is the search mentioned referring to a literature search or a search within the OP-FTIR data?

C8704

AC - We were referring to a comparison of spectral features from spectral databases and the spectra we acquired here. The sentence has been changed to: “A software comparison of our experimental smoke spectra to published reference spectra confirmed that several compounds. . .)”

RC - 2.4 Additional instrumentation details Page 16433, line 17 – Should there be a hyphen between reaction and mass?

AC - We use name and acronym of the instrumental technique as provided by the cited reference.

RC - Page 16433, line 20 – Should there be a hyphen between ion and proton as well as transfer and chemical?

AC - See previous response

RC - Page 16433, line 22 – Should there be a hyphen between chromatography and mass?

AC - See previous response

RC - Page 16434, lines 3-4 – Order of references should be alphabetical

AC - Fixed in next version

RC - 3 Results and discussion Page 16435, line 18 – Suggest changing fuels for burning to fuel on the bed

AC - Edited as suggested

RC - Page 16436, lines 27-28 - Order of references should be alphabetical

AC - Fixed

RC - 3.1 Emission factors of organic compounds Page 16438, line 27 – Abbreviation NMHC is not defined

C8705

AC - Changed to non-methane hydrocarbon (NMHC)

RC - 3.2 Emissions of nitrogen-containing species Page 16439, line 10 – Chemical name for N₂O is not provided

AC - Changed to nitrous oxide (N₂O)

RC - Page 16441, line 17 – Should it be R₂?

AC - All instances of r₂ have been replaced with R₂

RC - Page 16441, line 20 – Suggest changing an N₂ to a N₂

AC - ok

RC - Page 16441, line 27 – Suggest adding species (NO₃⁻) into units for average value of 0.2 +/- 0.4, adding the phrase and this work before including, and changing including to included

AC - fixed

RC - 3.4 Emissions of HCl Page 16445, line 10 – The emission factor for AK Duff is not actually shown in Figure 10, maybe this should be mentioned

AC - The figure shows on EF(HCl) for those fuel types of the southeast and southwest and excludes the AK duff and MT fuels. This will be pointed out in the caption

RC - Acknowledgements Page 16450, line 4 – Suggest removing the word agreement before Forest

AC - Fixed as suggested

RC - Tables Table 2 -The word location on top line of table could be removed to be consistent with Table 3 -To be consistent with equation 1 in the text, should the emission ratios for NMOC and OVOC be the reverse of what is shown and have CO₂ in the denominator?

C8706

AC - The word “location” has been removed from Table 2 These are emission ratios of NMOC to CO₂ and OVOC to CO₂. The labels in the tables were incorrect according to equation 1 and will be changed to ER(sumNMOC/CO₂) and ER (sumOVOC/CO₂) to be consistent with equation1

RC - Table 3 -In the caption the footnote should be a instead of 1 -The “other fuels” tested are included in the table, but this is not mentioned in the caption -For the fuels tested from CL, what do trt and utr stand for? These abbreviations are not used in Table 1.

AC - The inclusion of the other (MT and AK) fuels will be noted in the table title and caption. The trt and utr labels will be changed to cuh and uh as in Table 1

RC - To be consistent with equation 1 in the text, should the emission ratios for NMOC and OVOC be the reverse of what is shown and have CO₂ in the denominator?

AC - These are emission ratios of NMOC to CO₂ and OVOC to CO₂. The labels in the tables were incorrect and will be changed to ER(sumNMOC/CO₂) and ER (sumOVOC/CO₂) to be consistent with equation1

RC - Figures Figure 7 -The numbers on the top half of the y-axis are missing

AC - Since the y-axis units are unnecessary for this discussion, both y-axes have been changed to show no units as also noted by referee #2

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 16425, 2010.

C8707