

Interactive comment on “Measurements of biogenic volatile organic compounds at a grazed savannah-grassland-agriculture landscape in South Africa” by Kerneels Jaars et al.

Anonymous Referee #2

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Summary: The authors present two separate years of atmospheric measurements of biogenic volatile organic compounds (BVOCs) at a grazed savannah-grassland-agriculture landscape in South Africa. This long-term and chemically detailed data set allows the authors to accurately assess the seasonal variability of these reactive compounds and provides the scientific community with a valuable dataset of BVOC emissions in a rarely studied ecosystem. The author's present a careful comparison of the observed emissions to the surrounding vegetation and other physical parameters such as soil moisture. The contributions of each species to potential ozone formation are explored. The data is of high quality and the manuscript is very well written. I suggest publication with only minor revisions.

C1

Technical comments (P=page number and L=line number):

P1L22 and P3L5: These are not exactly the same statements. The first infers that anthropogenic sources only contribute 10% of the global annual VOC budget. The second statement (referencing Guenther et al.) states that 90% of BVOC emissions are from vegetation/terrestrial sources (i.e., only 10% from oceanic sources). Please be sure that these distinctions are more clear in the manuscript to avoid confusion by clarifying the contribution of BVOC vs. anthropogenic VOC. Also, do the emissions refer to mass or carbon or some other unit?

P2L12: lower for the grassland savannah or the other landscapes?

P4L25 and P29L2: African to Africa

P8L3: Can you state what the efficiency of the ozone removal was?

Section 2.3.1. Please add a brief description on how the samples were stored/transported prior to analysis. How much time would elapse between collection and analysis?

Section 3.5. How much of the correlation is simply driven by the fact that MBO, MTs, and SQTs generally have higher concentrations at night while isoprene will have the largest daytime emission? It would be interesting to compare the day and night time values of the compound classes, perhaps just for the wet season when emissions were enhanced.

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C2