

## Reviewer #1

I read this paper with great interest and congratulate the authors on an impressive set of results. However, the value of this study for the scientific community could be improved immensely if the authors would add in the supplement a Table with emission factors at least for the 100 most important VOCs as well as aerosol components like BC and OC. The most useful format of this supplement would be an Excel spreadsheet.

We would like to thank the reviewer for the comments and suggestions to improve the current work. We will have the reviewer comments in black, address the comments in blue, and modified sentences in red.

We have attached another table with more details of the emission factors for all organic vapors. Besides, we also added the BC and OC emission factor for the experiments we measured.

1. One of the most surprising results is the very clean combustion of the dung cakes. This is in strong contrast to all previous studies. The nine studies in my database give an average MCE of  $0.88 \pm 0.04$  (Andreae, 2019), while this study gives  $0.98 \pm 0.01$ . It would be interesting to see a discussion of what may explain this difference.

**Response:** We apologize for the error in the emission factor during the cow dung experiments. We have corrected the calculations. However, the average MCE (ranging from 0.89 to 0.97, with an average value of  $0.95 \pm 0.03$ ) is still higher than the values reported in your study ( $0.88 \pm 0.04$ ). In our study, the average MCE was calculated based on the real-time emissions from cow dung burning. Due to the lower concentration of organic vapors produced during cow dung combustion, we only selected data from periods with higher concentrations, which allowed us to detect more organic compounds for subsequent marker-selected analysis. This selection likely contributed to the relatively higher average MCE compared to your study. Additionally, I found other studies reporting higher MCE values. For example, Pervez et al. (2019) measured the MCE of dung cake burning in India, which ranged from 0.91 to 0.99. They found that MCE values from cow dung burning could range from smoldering-dominated combustion (MCE = 0.73) to flaming-dominated combustion (MCE = 0.99). The lower MCE during smoldering was achieved at a lower furnace temperature, while the higher MCE during flaming was reached at a temperature of 800°C.

2. On a minor note, the reference to the now outdated Andreae & Merlet (2001) should be replaced by the updated paper:

Andreae, M. O., Emission of trace gases and aerosols from biomass burning – an updated assessment: Atmos.

Chem. Phys., 19, 8523-8546, doi:10.5194/acp-19-8523-2019, 2019.

**Response:** We have updated the reference in the manuscript.

**Reference:**

Pervez, S., Verma, M., Tiwari, S., Chakrabarty, R. K., Watson, J. G., Chow, J. C., Panicker, A. S., Deb, M. K., Siddiqui, M. N., and Pervez, Y. F.: Household solid fuel burning emission characterization and activity levels in India, Science of The Total Environment, 654, 493-504, 2019.