

***Interactive comment on “Nepal Ambient Monitoring and Source Testing Experiment (NAMaSTE): Emissions of particulate matter from wood and dung cooking fires, garbage and crop residue burning, brick kilns, and other sources” by Thilina Jayarathne et al.***

**Anonymous Referee #1**

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Jayarathne et al. present emissions factors for various particle and gas-phase compounds emitted from combustion sources in Nepal. These sources include brick kilns, garbage burns, generators, water pumps, motorcycles, cooking stoves, and crop fires. These sources have not been well characterized in the past and significantly contribute to the air quality in this region. The study is very detailed and does a great job in comparing their values to previous work. EFs from this study are useful for source apportionment and regional air quality models. This study should be published in ACP after

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the authors address the below minor comments.

Minor Comments:

Page 2, line 26: mobile instead of moveable

Page 3, line 13: whereas the force-draught. . .

Page 3, line 29: change quantity to amount

Page 4, line 6: the majority of which were not collected and were ultimately burned. . .

Page 4, line 11: The challenges in characterizing

Page 5, line 6: should be 1970s

Page 5, line 27: I do not think VOC has been defined yet.

Page 6, line 9: the phrase “particularly for women and children who are near to the source” is a bit confusing. Maybe just state that women and children spend more time indoors near the burning source?

Page 6, line 21: Please change the sentence starting with “High pollution” so it exhibits parallel structure.

Page 6, line 25: “Further, its valley topography traps pollutants, and. . .”

Page 6, line 27: “ The Tarai. . .” sentence is awkward.

Page 7, line 25: 2.5 m length for a sample inlet is quite long. What are the particle and semi-volatile losses for this inlet? Also Teflon coated filter holders may have significant particle losses. Has this been characterized?

Page 7, line 30: what temperature was the sample at when it was sampled?

Page 9, line 12: Can old be better quantified?

Page 9, line 25: burning emissions sampled

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Page 10, line 1: Can the authors be a bit more specific about types of plastic? Predominately poly styrene? Or PVC? Or polypropylene?

Page 13, line 4: The sentence with “EFs for other particle. . .” is confusing? I could not quickly figure out the equations the authors were getting at.

Page 14, line 16: The sentence starting as “Another positive aspect. . .” is confusing. How does high concentrations (high concentrations of what? PM?) mean lower amounts of SVOCS? (SVOCS also has not been defined) I would think SVOCS would also be high concentration if PM is high concentration.

Page 17, line 11: what does “processed in the same way” entail?

Page 19, line 9: what does damp mean? How damp? Can this be quantified more than just damp?

Page 19, line 26: Could it also be overestimated? Variability implies over and under estimation.

Page 22, line 18: What does Measured organic species include? All those that are resolved in the GCMS? Or those that are positively identified with standards?

Page 22, line 28: What defines steady state operation? The engine reaches a certain temperature? How long did it take to reach steady state?

Page 23, line 4: Why is EFPM2.5 being compared to EFPM1? The authors comment that these values are comparable but they should not as the particle cutoffs are different. There should be less PM1 than PM2.5 by mass.

Page 25, line 6: Rephrase sentence starting with “The comparison. . .”

Page 30, line 23: should be e.g. instead of i.e.

Figure 1: Why does this figure not include EC? Section 3.1 also does not include EC. Is there a reason it was not measured for these samples?

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Figure 2: These colors are difficult to distinguished from each other. Black for EC looks like smushed Metals contributions. The chloride and Nitrate blues look the same. Smushed green for ammonia looks blue-ish too.

Figure 6: Why are biomarkers reported in different units than EF?

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