

Interactive comment on “Seasonal variation and chemical characterization of PM_{2.5} in northwestern Philippines” by Gerry Bagtasa et al.

Anonymous Referee #2

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This manuscript presents the first seasonal analysis of the fine particulate matter and its components in Burgos, and also discussed the source attribution using the PMF model. Though for each season, the study only had 7-14 days of sample, this study provides a peak for the magnitude and seasonal distribution of the PM_{2.5} distribution in this area. In my opinion, this paper is written poorly. Sentences were sometimes not complete or, too long with comma only. The authors should spend time and effort to revisit their draft and improve the writing. Some specific comments can be seen below.

Major comments: 1. In the abstract, add the standard deviation for the the peak and low concentration of the PM_{2.5}. Also, keep consistent for the valid digit used in the paper. For example, in the abstract, the authors listed the highest PM_{2.5} of 21.59, but in the section 3.2, it listed 21.6.

C1

2. The discussions of the transition of the monsoons under section 3.2 are not very appropriate, or even very redundant. I didn't see any connections between these few paragraphs with other contents. Suggest the authors remove these discussions, or put them together with the source attribution under section 3.4 to help explain the sources of PM_{2.5} over this area.

3. In section 2.1, the authors discussed that the observation period during summer for this study was a “monsoon break”, which makes all sampling periods non-rainy days. This makes me wonder how will that affect the seasonal distribution of the aerosols over this area, and how the authors' conclusion “peak in spring and low in fall” will stand out. Precipitations should have significant impact on aerosol. So please explain or add to the discussions.

4. Explain the enrichment factor.

Minor comments 1. Reorder all the figures. The figure number start with 1 instead of 11.

2. Pg 1 line 2: This study only has 7 days of observation during summer. So please clarify.

3. Pg 1 line 16: change “but also on its effects” to “but also for their effects”

4. Pg 1 line 17: cite the latest IPCC 2013 report.

5. Pg 1 line 20: “is transported” to “are transported”

6. Pg 2 line 10: incomplete sentence.

7. Pg 2 line 33-35: In this paragraph, the authors started to discuss the LRT on the influence of the aerosol in the county. Then they switched to discuss that this region is also source of biomass burning emissions. The authors should make a new paragraph discuss on the differences between the LRT and regional sources on local aerosol concentration. No need to capitalize Organic Carbon.

C2

8.Pg 4 line 5-9: rewrite these sentences.

9.Pg 5 line 24-26: use the seasonal mean plus STD to discuss the seasonal differences since the values showed in the manuscript are from daily values which are meaningless.

10.Pg 6 line 3: put the “the bold dashed line ...” into figure 5 instead of the main contents.

11.Pg 7 line 4-5: rewrite the sentence.

12.Pg 9 line 25: delete the last half sentence or rewrite as a whole.

13.Pg 10: in the conclusion part, add the discussions of the seasonality of the total PM_{2.5}, which is the main points of this study.

14.Pg 10 line 23-27: consider to move this paragraph into the results.

15.Pg 18, Figure 4: I suggest the authors make a similar plot as Fig. 3 for both OC and EC, by doing that both the temporal characteristic of OC and BC, and also their ratios can be clearly seen.

16.Pg 18, Figure 5: choose different markers for the OC/EC ratio plots.

17.Pg 21, Figure 8 (c): change Ca to “Ca²⁺”

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