

Interactive
Comment

***Interactive comment on* “Changes in chemical components of aerosol particles in different haze regions in China from 2006 to 2013 and contribution of meteorological factors” by X. Y. Zhang et al.**

X. Y. Zhang et al.

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Dear Anonymous Referee,

Thanks for your careful review of the manuscript. We read the reviewer’s comments carefully, and have responded and taken all of reviewer’s comments into consideration and revised the manuscript accordingly. All the changes have be highlighted and tracked changes in the revised manuscript. My detailed responses, including a point-by-point response to the review and a list of all relevant changes, is as follows:

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“Interactive comment on “Changes in chemical components of aerosol particles in different haze regions in China from 2006 to 2013 and contribution of meteorological factors” by X. Y. Zhang et al. Anonymous Referee #2 Received and published: 15 August 2015 This study reveals the reasons for severe haze-fog event formation in Jan. 2013 by investigating the changes in major chemical components over recent years in different haze regions. The authors also evaluate the relative contribution of meteorological conditions during the haze process by introducing a parameterized index. The paper presents solid findings that are of interest to the readers to understand the aerosol characteristics and emission sources over a large area in China. The data reported are valuable to validate regional/global models. The paper is of good scientific and well structured, worth of being published in ACP after some revisions.”

Responds: Thanks for the positive comments from reviewer.

Major comments: “1. There is no clear statement to describe how to retrieve mineral aerosol or dust mass concentration. A description of the approach to calculate mineral aerosol is necessary.”

Responds: We revised the text to have more detailed description about the estimation approach of mineral dust concentration (P10, L12-25).

“2. In figure 2, it gives the information of “dust”, but in the text and other tables and figures, the authors use “mineral”. They should keep consistent if they refer to the same component.”

Responds: In this figure we used “dust” for saving space season to simply denote “mineral dust” that is we commonly used in the text and other tables.

“3. P17, L4-5, it is not clear that in which winter, the EC concentration is $21 \mu\text{g}\cdot\text{m}^{-3}$. P18, L27, Dose the $23 \mu\text{g}\cdot\text{m}^{-3}$ refer to the mass concentration of ammonium in winter 2013?”

Responds: Revised and pointed out that it is winter of 2012

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“4. P21L5-9, do these processes the author mentioned, coal ash, fugitive dust, etc. have significant seasonal variation, which can be the reason for higher mass concentration of mineral dust in winter?”

Responds: Thank you for the suggestion. We made a further statement that coal-ash contribute the increased mineral dust mass in winter season (P25, L2-7).

5. P11, Paragraph 1, it should be clarified that if “PM level” in this section represents the PM10 mass concentration. The English shall be polished by a native speaker.

Responds: Changed and polished

Some specific points are shown below: 1. In the abstract, the name of “Yangtzi River Delta” is used, but in other sections, it is “Yangtze River Delta”. It should be consistent and “Yangtze River Delta” should be used.

Responds: Accepted and unified.

2. P4, L13: “questions was” should be changed as “questions were”. P8, L15: please keep these parameters, $c_{(c)}$ and $c_{(c)}$ being consistent: P8, L22, “ e ” the letter “e” should be the subscript, “ e ”.

Responds: Revised.

3. P11, L11, it should be “went up to 160.”

Responds: Revised

4. P11, L14, it should be “PRD areas”.

Responds: Revised

5. P12, L10, “OC accounted 8 P12, L20, “ accounted 33

Responds: The “ \sim ” is correct, it means about.

6. P13, L23, the unit of 2.5, “ m” should be supplemented. It is the same in P28L15.

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Responds: Added

7. P18, L9, “plenary boundary” should be changed as “planetary boundary layer”.

Responds: Corrected

8. In Figure 2a, the unit of mass concentration should be given in the legend.

Responds: Changed

9. There are some other grammar mistakes that the authors should pay more attention to.

Responds: Modified.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 19197, 2015.

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