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Discussions

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comment

Interactive comment on "Introduction to Special Issue – In-depth study of air pollution sources and processes within Beijing and its surrounding region (APHH-Beijing)" *by* Zongbo Shi et al.

Anonymous Referee #1

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As an introduction to a special issue, the manuscript should be improved better. Honestly speaking, this reviewer has difficulties to follow many parts. Moreover, several giant projects on air pollution and health impacts funded in the volume of billions RMB yuan are processing currently or have been completed in Beijing and neighboring provinces in the last decade. These works should be summarized to make the literature review more complete. The authors are strongly encouraged to present a summary to highlight the importance of APHH-Beijing in comparison with others. Section 2 is too ambitious to be practical for two short-term campaigns. Please consider to revise. This reviewer also has several minor comments for authors considering.

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Discussion paper

1) Lines 76-80 "The winter campaign was characterized by high PM2.5 pollution events whereas the summer experienced high ozone pollution events. Air quality was poor during the winter campaign, but less severe than in the same period in 2015 when there were a number of major pollution episodes. PM2.5 levels were relatively low during the summer period, matching the cleanest periods over the previous five years." The statement looks like the report issued by local EPD rather than a scientific study. The reviewer gains almost nothing from it. It should be more specific.

2) Lines 80-82, "Synoptic scale meteorological analysis suggests that the greater stagnation and weak southerly circulation in November/December 2016 may have contributed to the poor air quality." Contributed to a few or all severe PM2.5 pollution events?

3) Line 100, "particularly severe in developing megacities, such as Beijing, where rapid urbanisation has led to a fast increase in pollution emissions (Guan et al., 2014), on top of regional pollution from industrial and other anthropogenic activities." Can Beijing be called as developing megacities? The reviewer also cannot understand the statement, please consider to revise.

4) Lines 117-119 "This makes Beijing a particularly interesting place to study as it provides a new environment to test our understanding of urban pollution processes." The reviewer feels very surprised that all Chinese co-authors agree with the statement.

5) The objectives in Section 2 are ambitious. The reviewer has doubt how they can be achieved through two short-term campaigns at two sites.

6) Section. 3.1.1 does not sound scientific to this reviewer. It makes more sense to use the data from the air quality monitoring network and the two additional sites together to evaluate the accuracy of emissions of air pollutants?

7) Lines 243-246" Previous studies of pollution in Beijing have shown that it is often perturbation of the physicochemical and dynamic atmospheric conditions that modu-

late the most severe air quality events, rather than changes in emissions, for example during the development of stable inversions or periods of strong photochemistry." The references are missing. Please consider to revise. The statement is hard to follow.

8) Lines 280-283, " AIRLESS aimed to advance air quality and health research in China by bringing together two fields of research that have made rapid advancements in recent years: measurements of a wide range of pulmonary and cardiovascular biomarkers in a panel study and personal monitoring of multiple air pollutants with high spatio-temporal resolution by sensor technology" In China or In Beijing and Neighboring Provinces? Why are the two sites' measurements helpful for the targets?

9) This reviewer listed only a few. The authors are encouraged to check carefully for the remaining parts.