

In this study, the authors investigated the characteristics of aerosol chemical compositions by bulk-chemical and single-particle observations, analyzed the sources and formation mechanism of PM_{2.5} pollution at the beginning of 2023 in Chengdu. The results of this observation experiment, including chemical components, meteorological conditions and source analysis, are comprehensive introduced in this paper. However, with the lack of the innovation in methods or ideas, this work did not provide significant new insights and scientific highlights. I think this paper is more a presentation of observational data rather than a scientific analysis as research article. In addition, the observation period is only about half a month, which does not represent the pollution level in southwest China as described in title. I also agree with previous reviewers of this article about the lack of analysis and discussion of new scientific findings. As a result, I would encourage the authors to carry out in-depth analysis and innovative results with major revision. But much further work is still required at this stage.

L171-174: The diagram in the upper left corner of Figure 1(a) needs to remove the information of road network.

L217: Please add references about density of 2 g cm⁻³.

L372: Add the definition of “orange” haze alarm.

L495-505: This description seems superfluous and does not fit the main idea of the article.

L556-558: The particulate removal process is complex and there is no direct indication that this is influenced by the hygroscopicity here.

L605-620: Figure 7 and its associated descriptions are best moved to the supplement file.

L698-704: How were the contributions of local sources and regional transmission calculated?

L633: Please explain what is meant by “non-exhaust emissions”.

The grammar of the essay needs a thorough examination.(for example, L125: “investigate” ; L257: “sensitivity”; L315: “mitigate”...)