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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Spatiotemporal variations in atmospheric aerosols in East Asia: Identifying local pollutants and transported Asian aerosols in Osaka, Japan using DRAGON" *by* Makiko Nakata et al.

Anonymous Referee #2

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The manuscript by M. Nakata, et al., shows a study based on one day's AERONET observational data and get a big conclusion. I believe this manuscript is in the scope of this journal. However, a series of issues on science level should be reconsidered.

First of all, the title is inappropriate. The observational data used in this study is only limited to the middle of japan near Osaka, which could not present the fact of East Asia.

Second, one day's data in a limited region may not be effective to present the spatiotemporal variations of atmospheric aerosols.

Third, AERONET data, like many other measurements results, contains large uncer-

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Discussion paper

tainty. The uncertainty may affect the conclusion. This need to be analyzed.

Forth, No enough information is provided to the borrowed simulations (Fig 7). The simulation without considering the practical emissions means nothing on science.

Fifth, it is not shown how the EDX analysis prove that the pollution is from China. It is more of a speculation rather than finding. For a modeler, it is more likely that long range transport would be averaged over such a small region (sites). Then the variations tend to show local difference. This can upset the conclusion.

Sixth, the expression of this article is somewhat accurate but is not enough for publication. It seems that all the conclusion of this article is based on speculation. This may be the truth. But this is not a scientific research. We need a conclusion that is base on the truth and get proved somehow.

Seventh, it is incorrect to think that high SO2 level indicates the pollution from China. As it is also mentioned in this manuscript, the dust storm, may affect acid deposition. There have be many researches on dust storms showing that dust storms in China increase the PH value of air in northern China and in the outflow. When you mention both, you have to do more research to determine the exact truth.

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