

***Interactive comment on* “Characterization of aerosol pollution events in France using ground-based and POLDER-2 satellite data” by M. Kacenelenbogen et al.**

M. Kacenelenbogen et al.

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We would like to thank the second reviewer for his beneficial contribution to this paper.

1. What instruments were used and what are the uncertainties in the daily values of PM_{2.5}? Was hourly PM_{2.5} data available? We agree on the importance of presenting the type of instrument and giving the uncertainties in the measurements of the PM values. The mass concentration of the PM fraction is determined continuously using a tapered Element Oscillating Microbalance (TEOM). The uncertainty on the daily PM values is of a few $\mu\text{g}/\text{m}^3$. As suggested by the reviewer, we have added in the revised text of section 2.1 the kind of instrument used to measure the PM values and its uncertainty.

Hourly PM_{2.5} data were available but we were interested into assessing the potential of POLDER-2 to estimate regional pollution events on a daily range.

2. Figure 1 discussion could be expanded. There are numerous ‘events’ where the AOT is much higher than the PM_{2.5} (April-June) and equally if not more AOT values much smaller than the PM_{2.5} values. The analysis can be drawn out better for these cases.

We follow the reviewer’s suggestion and we have added a short discussion in section 2.2 on the differences between AOT and PM values in figure 1.

3. A discussion of sources and probable aerosol types will be beneficial.

We don’t have any relevant information to discuss in details and characterize the aerosol sources and type, since this is not in the main outlines of our paper. Our objective here is to present a first evaluation of POLDER’S capacity to monitor PM_{2.5} particles. However, as suggested, we have added a general description of the aerosol type and sources to the revised text of section 2.1.

4. Finally, I would like to see a section discussing the uncertainties in using satellite data for PM_{2.5} air quality research

Discussing the uncertainties of using satellite data for PM_{2.5} air quality research in general is quite above the objectives of our paper. However, some explanations on the issues brought by the use of satellite data for PM_{2.5} air quality studies have been added at the end of section 3.

5. Minor points: The authors may want to do a literature survey for more recent papers for using satellite data for air quality work. Several peer reviewed papers have appeared since Wang and Christopher, 2003 and Engel-Cox et al., 2004. Figure 1 needs relabelling in English.

Like suggested by the reviewer, we have added some recent papers like the study by [Li et al., 2005] and [Al-Saadi et al., 2005] on the use of satellite data for air quality

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studies.

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