

Comments on “One decade parallel PM₁₀ and PM_{2.5} measurements in Europe: trends and Variability” by I. Barmpadimos, J. Keller, D. Oderbolz, C. Hueglin, and A. S. H. Prévôt.

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This paper summarizes the analysis of the trends and variability of PM₁₀, PM_{2.5} and PM_{coarse} concentrations at selected sites in Europe. The trends and variability of PM have implications for air quality, climate, and human health assessments. Therefore, this is an important research area, especially for coarse PM since the research on the characteristics of coarse PM has been much less extensive compared to fine PM.

While the subject is very interesting and the results of this paper are very valuable, we suggest a few issues that the authors may consider addressing:

1. Is there any reason to choose only seven sites across Europe? Is it possible to have more sites that may provide a better representation of Europe? In any case, a justification for selecting the sites may help improve the manuscript.
2. The sites chosen for analysis have very low coarse PM concentrations, i.e. 3-7 $\mu\text{m}/\text{m}^3$ at six of the seven sites (the seventh, Bloomsbury in UK, has an annual mean of 14 $\mu\text{m}/\text{m}^3$). The concentrations between 3-7 $\mu\text{m}/\text{m}^3$ may be close to the background, and thus the trends as well as relationships between the low coarse PM concentrations and local meteorological conditions may not be robust. The authors may want to address this in the manuscript, and even consider keeping only the calculated relationships between fine PM and meteorological variables.
3. Near line 11 on page 11: The authors mentioned that primary biological coarse PM emissions of pollen are likely enhanced at higher temperatures. Could a reference be added for this statement?
4. If the authors want to keep the analysis of coarse PM, in addition to PM_{2.5} and PM₁₀, we recommend that it is included in the title of the manuscript, or at least in the list of keywords.