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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Fungi Diversity in PM_1 and $PM_{2.5}$ at the summit of Mt. Tai: Abundance, Size Distribution, and Seasonal Variation" *by* Caihong Xu et al.

Anonymous Referee #1

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The authors did not really address my point about particle bounce. The authors insisted no particle bounce, but they did not provide evidences or reasons of why they can insist so. What measures were taken to prevent particle bounce from the fractionating inlets? I assume the fractionating inlets (i.e., impactors) remove all particles larger than 1 or 2.5 μm, and the remaining fractions (i.e., PM1 and PM2.5) were collected on afterfilters. This point is very important since the study is intended to report fungal communities in PM1 and PM2.5 fractions. It is possible the authors merely measured accumulations of bounced particles from the fractionating inlets that were not really of PM1 and PM2.5 portions.

The authors seems to misunderstand the definition of sharpness of cutoff diameters by

impactors. Cutoff diameter and sharpness of impactors are different. See, for example, Huang, J Air Waste Manag Assoc. 2005;55(12):1858-65 for a definition of sharpness of cutoff diameters.

The details of DNA extraction protocol were provided, but information about extraction efficiency was not provided. If DNA extraction efficiency is unknown or un-assumed, DNA concentrations in air cannot be back-calculated.

The authors explained two possible reasons of why Alternaria can be found in PM1 and PM2.5 fractions. The second explanation of fragmentation by the sampler's inlets is problematic. If it is so, the sizes of Alternaria reported in this study were not really representative of their sizes in air. I assume the purpose of this study was to report their sizes in air, not the sizes of spores fragmented by the sampler's inlets.

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