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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Characterization of African dust over southern Italy" *by* A. Blanco, et al.

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This is an interesting paper but I suggest to include more technical details on your collection and sizing methodology because I think the reader can wonder whether you recover the actual size distribution of insoluble particles in the rain. I believe that we cannot compare size distribution data from this work and from the litterature in section 4.2 (note that a reference is missing for Sardinia data, p. 12, line 17-20), and conclude on differences from one site to the other without considering carefully the respective collection and sizing techniques.

Dust particles were left on a piece of glass by falling raindrops. We can expect a competition between cleansing and deposition on the glass surface, particularly if the rain was intense. Which size had the sampling surface? Was it horizontal? How well

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was it protected from splashes from other possibly contaminating mineral surfaces? Was it exposed only during rain and removed immediately after? Which were the rain amount and duration? etc. It might be interesting to demonstrate by a lab experiment that a size distribution of particles suspended in water is well sampled by splashing a surface.

Regarding sizing, the picture in fig. 5a shows intense loading of the substrate with recovery of particles by others. How well can you size and shape all individual particles in a given window in such conditions? Do you realize images of randomly selected areas, or do you systematically scan the substrate to minimize edge effects on the statistics? Do you use a manual, or computer-assisted, or fully automated technique to individualize the particles. Furthermore, I know by experience that it is not simple to combine particle size distributions obtained at different magnifications. I recommend (i) to add a table specifying how many particles and how much area were analyzed, and for which size range, at each magnification, and (ii) to discuss how well data obtained from the different magnifications are consistent in common size ranges.

Interactive comment on Atmos. Chem. Phys. Discuss., 3, 4633, 2003.

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3, S1794–S1795, 2003

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