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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "Classification of aerosol properties derived from AERONET direct sun data" *by* G. P. Gobbi et al.

**Anonymous Referee #1**

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The paper presents a new simple method to compare results of a multiple parameter analysis of aerosol physical and optical parameters. The method allows to classify aerosol characteristics according to origin and physico chemical or size composition. Some omissions are in the final analyis / discussion section of the paper that should be added to the final version and could improve the paper.

I recommend the paper for publication with some minor corrections

specific comments in the introduction the authors promise to demonstrate the effect of different size distributions on the angstrom coefficient. although some data are given later this demonstration is missing in the text lateron.

page 7, last paragraph, In Fig.3, Rome presents a case similar to Beijing and Kampur

is not true. Rome is comparable to Kampur but not to Beijing. The differences between Beijing and the two other sites should be discussed.

on page three the end of the introduction a new parameter, the extinction fraction is introduced. This parameter is lateron given as the ratio of fine to total using a greek character. It would be better to introduce this character the first time this parameter is used to avoid confusion during reading. on page 4 this ratio (extinction fraction) is given as 1 - 99%. a ratio should be 0-1.

minor comments/recommendations

section 3, Application to Aeronet data first paragraph, line 15, ...superimpose their signal on the pollution one? (signature) in Beijing and Kampur line 21, ... what we see in figure 3 instead of in the figure line 22, ... , into a larger size of the fine mode and a fine fraction...

Page 8, line 12. , ... while confirming the absence of a significant contribution of dust at the Ispra site...

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Interactive comment on Atmos. Chem. Phys. Discuss., 6, 8713, 2006.