

Interactive comment on “Observation of atmospheric aerosols at Mt. Hua and Mt. Tai in Central and East China during spring 2009 – Part 2: Impact of dust storm on organic aerosol composition and size distribution” by G. H. Wang et al.

Anonymous Referee #2

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This paper describes the concentration of organic compounds in aerosol particles collected at two mountain sites, Mt. Hua and Mt Tai in China. Authors discuss the concentration and size distribution of n-alkanes, PAHs, fatty acids, fatty alcohols, sugars, aromatic and diacids during dust event and nonevent occurred at both of the sites. Paper is nicely described the concentration variations of these compounds at both of the mountain sites as well as their changes in size distribution during the dust and non dust period.

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I recommend for the acceptance of the paper.

Positive sides: 1. Very unique information of these compounds during dust event and nonevent 2. Discussion of shifting of peak of size distribution of organic compounds especially for PAHs 3. Proposing trehalose as tracer for dust aerosols

Negative sides: Not many evidences are given for trehalose to declare it as tracer for dust aerosols over Ca.

Comments:

Para 33543, Abstract, L5, “polarization” may change to “splitting” or “shifting”.

Introduction, Para 33546, L5, “– the highest in the word”, very strong statement!

Para 33549, 3.1.1 n-alkanes, fatty acids and fatty alcohols, L25, “— –from plants in Gobi region.” Please write a reference value of Gobi aerosol if available.

3.1.2 PAHs and sugars, Para 33551, L 25-5, “The more LMW PAHs in the — — - to lowland regions.” Logic is not very clear!

Para 33551-33552, L25, “Ca and Ca²⁺ are —. —. —. —and sandy lands in Gobi.” It needs more evidences for support, such as correlation between nssCa and trehalose, and also between (nssCa - soil derived Ca) and trehalose. Soil derived Ca can be calculated using some soil originated metals such as Al.

3.1.3 aromatic acids and diacids Para33551, L25, “aomatic” ?

Para 33553, L10-15, “— , indicating that —those at Mt. Tai.” Needs more justification.

Para 33554, 3.2 Size distribution, L15, “some references such as Agarwal et al., ACP, 10, 5839-58, 2010 can be added.”

Fig. 9-10: Font size is very small, difficult to read.