Atmos. Chem. Phys. Discuss., 11, C362–C363, 2011
www.atmos-chem-phys-discuss.net/11/C362/2011/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observation of atmospheric aerosols at Mt. Hua and Mt. Tai in central and east China during spring 2009 – Part 1: EC, OC and inorganic ions" *by* G. Wang et al.

Anonymous Referee #1

Received and published: 23 February 2011

General comments: Impact of dust storm from central Asian and Gobi desert regions on the downstream atmosphere is an important issue in the field of atmospheric environment science. Most of the related observations have been done in lowland sites such as urban, rural and marine areas. However, only a few have been done in highland area (e.g., mountain areas). Unlike those in the urban air, aerosols in the mountain atmosphere is mostly derived from long-range transport, and less influenced by local sources, thus are representative of atmospheric characteristics in a large scale. Therefore, I think the Mt. Hua and Mt. Tai work done by Wang et al is very important for readers to improve their understanding on the physical and chemical properties of atmospheric aerosols over East Asia . The simultaneous observation of aerosols at

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

both mountain areas during the spring of 2009 has shown series new insights into the current status of air pollution in China, which are very impressing to me. Higher concentration of nitrate than sulfate in the Mt. Tai atmosphere strongly suggests that atmospheric physicochemical properties in East Asia has been changing due to a sharply increasing vehicle emissions. Based on their observation, Wang et al pointed out that lower ratio of sulfate to EC found for the Mt. Tai samples indicate that warming effect of aerosols in east China may be more significant than in central China. I believe this finding is also very important, because this means that emission control for black carbon should not be neglected while Chinese government has tried to reduce SO2 emission, especially when replying the global climate change. The paper is organized well, and the figures and tables are presented in reasonable format with adequate interpretation. Therefore, I recommend an acceptance for the paper after a minor revision.

Detailed comments: 1. Page 2612, line 10, I suggest to add “at Mt. Tai” as “The fact of NO3- exceeding over SO42- at Mt. Tai”. 2. Page 2614, please add more information on the sampler such as brand and company name, because this is important for readers when comparing the current data with others documented. 3. From page 2619, line 24 to page 2620, line 3, the related data and explanation in this paragraph is good. Such a new insights into the current status of air pollution in China raises an important issue that emission control of EC should not be neglected when the government has reduced SO2 emission rate. 4. Page 2622, line 21-22, add references. 5. Page 2622, lin3 15-27, why relative abundance of nitrate to sulfate in Mt. Tai is higher than in Beijing and Shanghai, two east coastal cities located in the same NCP region, is that due to the mountain meteorological conditions such as higher RH and lower temperature, which is favorable for the nitrate aerosol formation? 6.Page 2623, line 9, I would like to change as “much more pronounced”. 7. Page 2626, line 25, I would like to change as “no significant spatial difference for SO42-. . .” , which is more understandable for readers.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 2611, 2011.

ACPD

11, C362–C363, 2011