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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Dicarboxylic acids, metals and isotopic compositions of C and N in atmospheric aerosols from inland China: implications for dust and coal burning emission and secondary aerosol formation" *by* G. Wang et al.

Anonymous Referee #2

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Report for the paper submitted to ACPD :

Title: Dicarboxylic acids, metals and isotopic compositions of C and N in atmospheric aerosols from inland China: Implications for dust and coal burning emission and secondary aerosol formation Author(s): G. Wang et al. MS No.: acp-2010-95

General comments

This paper is presenting a nice set of interesting data. However, the discussion is rather short for each part, and some of the conclusions are not supported by the data (cf rem for page 6903). I suggest some important revisions before publication in ACP.

Specific comments Page 6898 line 10: “field blank” Page 6899 line 4: more details are needed for the description of the protocol for water extraction that strongly influences the pH measurements. Page 6901 line 10: I seriously doubt that larger OC/EC ratios in suburban areas during both seasons can result from biogenic emissions. Does your organic measurement support such a hypothesis? Page 6902 lines 14-17: how do you explain such a large difference fo glyoxylic acid? Does this mean that glyoxylic acid is resulting from coal combustion? Page 6902 lines 18-20 and figure 4: Does figure 4 include only data for the urban area? Are the ratios the same for the suburban area? Does it say something about the oxidation and sources? Page 6902, section on organic acids: there are no discussions on the other measurements presented in Table 2. Page 6903 lines 15-16 (and also in conclusion): this is most probably plain wrong. Some part in the correlation is most probably due to covariations related to meteorological variations. Most important, coal burning is a large source of Ca and Fe. Page 6903 lines 23-24: a major source of what? Page 6904, lines 1-17: there are some redundancies in this paragraph. One hypothesis behind your explanation is that the sources are constant in each season (hence the δ13C at the emission are constant) Page 6904 lines 18-27: again, the sources of N may be of extreme importance for the isotopic composition.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 6895, 2010.