Atmos. Chem. Phys. Discuss., 4, S1644–S1646, 2004
www.atmos-chem-phys.org/acpd/4/S1644/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Evolution of organic and inorganic components of aerosol during a Saharan dust episode observed in the French Alps" *by* G. Aymoz et al.

Anonymous Referee #2

Received and published: 30 August 2004

Review ACPD-2004-0039

General remarks:

The manuscript presents observational results for aerosol chemistry and particle numbers from a Saharan dust event in an Alpine valley. As a reference case for absence of Saharan dust but, occurrence of anthropogenic pollution, another episode at the same observation station is presented. The different aerosol microphysical and chemical features are discussed for these two episodes. Conclusions are drawn concerning the interaction between desert dust particles and atmospheric constituents of anthropogenic origin.

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Interactive Discussion
Discussion Paper

The paper presents interesting material which justifies publication in ACP. Major changes are recommended concerning the presentation of the results, see also the specific comments in the following.

Specific comments:

The authors describe very extensively the evolution of aerosol-chemical and aerosol-physical properties during these two events. Adding one table which contains mass concentration values of respective species during the dust events and for non-dust conditions text would improve the presentation considerably. It would also help to compare model results and observations.

A detailed discussion is needed which focuses on the significance of the observed differences in the presented chemical and physical aerosol properties between the two observation cases.

All data are presented as time series, while the discussion of results focuses on correlations. The authors have to justify that the claimed correlations are indeed of statistical significance. This is a major gap in the manuscript. Without correlation plots and corresponding correlation analyses, the significance or validity of some conclusions is at least questionable.

Technical corrections:

Change all units of mass concentration to the general format, i.e., no full stop between mass and volume units.

Page 3877: change reference (Schurath and Neumann, ...) to (Schurath and Naumann, ...)

Page 3879, line 1, rewrite first sentence.

Page 3879, line 15, change ... flows rates ... to ... flow rates ...

Page 3879, line 4, change ... Particles concentrations ... to ... particle concentrations

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Interactive Comment

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Same page, line 21, change ... ionic .. to ... ion ...

Page 3884, line 6, change ... a previous dust episodes ... to ... a previous dust episode ...

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 3875, 2004.