

Interactive comment on “Polar organic compounds in rural PM_{2.5} aerosols from K-pusztá, Hungary, during a 2003 summer field campaign: sources and diurnal variations” by A. C. Ion et al.

A. C. Ion et al.

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We would like to thank this reviewer for the time and effort spent in evaluating our paper. The comments have been helpful and have improved the paper. In particular, we have appreciated the general and thoughtful comments concerning the potential usefulness of the targeted polar compounds for carbonaceous aerosol characterization and source apportionment.

Reviewer: The measurements seem to reinforce the occurrence in the environment of oxidation processes of isoprene leading to particulate organic matter, through the detection of compounds such as methyl-tetrols, demonstrated to be formed from iso-

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prene oxidation in laboratory experiments, under acidic conditions. The compounds are then, probably, a good tracer for particulate organic matter production from isoprene degradation in the atmosphere. It would be important to be able to infer about the real contribution of isoprene oxidation processes to the atmospheric organic aerosol loading (is it minor or substantial?). One of the limitations of these and other proposed organic species as tracers of sources and processes of organic aerosol formation is that, in most cases (or almost in all cases) they are presented as qualitative indicators only. Almost only with the exception of levoglucosan, the organic species that are indicated as possible good tracers of a formation process, or source, never are given in quantitative terms, as a fraction of the organic carbon resulting from that source. This highly limits their usefulness in the quantitative, or semi-quantitative, apportionment of the atmospheric carbonaceous aerosol.

Response: We fully agree with these general comments, which summarize the state-of-knowledge (i.e., usefulness, limitations, and future needs) on tracers for atmospheric carbonaceous aerosol characterization and source apportionment. In response, we have addressed these comments in the new section Conclusions. In this new section, we have also pointed out future research needs and have mentioned ongoing research in this regard. New conclusions section: see our responses to the comments of reviewer #1.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 1863, 2005.

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