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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aircraft measurements of polar organic tracer compounds in tropospheric particles (PM_{10}) over Central China" *by* P. Q. Fu et al.

Anonymous Referee #1

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This manuscript addressed the polar organic compounds measured by aircraft during summer and spring in central China. Although the dataset is a little old for the sampling period is in ten years ago, some new insights can be found by the discussion and conclusions. I recommend publishing this paper after addressed the following comments. 1) The detail QA/AC for filter keeping and chemical experiments should be added to show the dataset quality, for it was nearly 10 years past after the sampling.

2) The seasonal variation of meteorological condition (for example the mixing layer height and RH) and ground vegetation cover should be described when analysis the datasets.

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3) Do the authors supply fire spot map in spring and summer to support the conclusion that biomass burning was more abundance in spring than in summer? In addition, literatures related biomass burning on ground observation in central China should be cited to support your conclusion.

4) One of conclusions: Concentrations of the measured organic species decreased with an altitude, suggesting that they are emitted from primary sources and/or produced by secondary oxidation of their precursors on the ground surface. I suggest to cite some literatures about ground observation results to demonstrate your assume.

5) Does the levels of general chemical species (such as dust trace elements, water soluble ions, and OC and EC) were determined or not? Such results may also favor the conclusions of this study.

6) There are too much assuming in conclusions. For example, “Most of the POA and SOA tracers were less abundant at higher altitudes, suggesting they are of ground surface origin, either being directly emitted from anthropogenic/natural sources on the ground surface, or rapidly formed through photooxidation of their precursors emitted from the ground surface and then diluted during uplifting into the troposphere”. Even they are beyond the scope of this study, prior literatures can be cited to demonstrate you opinions.

7) For the last sentence of the abstract, the author should be cautioned that the levels of primary biological aerosols and biogenic SOA influenced heavily on the ground vegetation cover, so their seasonal distribution should be evident, that’s their levels should be high in late spring, summer, and early autumn, but relative lower in cold seasons.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 24481, 2013.