

Interactive comment on “Coupled isotopes of plant wax and hemicellulose markers record information on relative humidity and isotopic composition of precipitation” by M. Tuthorn et al.

Anonymous Referee #1

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“Coupled isotopes of plant wax and hemicellulose markers record information on relative humidity and isotopic composition of precipitation”, The Authors of present manuscript conducted a major revision of the manuscript. In general the manuscript has been improved. The whole manuscript has been revised accordingly to reviewer's suggestion and is now more comprehensible. However, some other comments the authors have not addressed too much, especially samples and soil characters. There are still some comments and critical points that should be considered.

Abstract I also wonder the last sentence (conclusion), which is too long and unclear. Just “support to the coupled $\delta^2\text{H}$ lipid and $\delta^{18}\text{O}$ sugar biomarker approach”, what are the new observations? What are the improvements on the well-known approach? So,

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I still suggest the authors put forward a clearer conclusion according to the new observations.

Introduction The section is informative, and the objective is now clearer.

Method The depth and some general physico-chemical characteristics of topsoil should be included. Why “The soil samples were air-dried in the field and later in an oven at 50 °C”? How long the time of air-dried and over-dried? Some references are needed. “. . .the field replications were merged to one composite. . .”, so there are no replicates. I suggest the authors give the readers more convinced reasons.

“For samples 1–12, an additional purification step with silver nitrate columns was carried out in order to eliminate unsaturated compounds. The chromatograms of the other sampled displayed no requirement for this purification step.” Why?? What are the differences among samples?

I still wonder that there are only 20 samples; I don't think it is correct to calculate them to a general model. Please explain it more clearly.

Results and discussion There are sufficient data, figures and tables. I suggest the authors depart these two parts to make the change tendencies and their exploitations much clearer. In the present status, much more observations had not well explained.

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