

This is my second review of the study “*Origin, transport, and retention of fluvial sedimentary organic matter in South Africa’s largest freshwater wetland, Mkhuze Wetland System*” by Julia Gensel and colleagues. The authors carefully considered the suggestions of my first review. I appreciate the detailed response to each comment and respective modifications in the main text. Overall, the study is sound, but there are still some minor comments to the manuscript. Thus, I suggest *minor revisions* for the study in its current form.

Specific comments:

- L. 6ff.: It might be good to shortly explain the I-index and R-index in the abstract like you do for leaf wax lipids and their compound-specific isotopic $\delta^{13}\text{C}$ and δD signature.
- L. 98ff.: Please introduce to the ACL as well, which is presented in the results section and table 1. Due to the general nature of this section, please note that both C_{27} and C_{29} are thought to indicate tree-like vegetation while C_{31} and C_{33} are predominantly synthesized by grasses. However, both C_{29} and C_{31} can reflect a mixed signal of trees and grasses. This statement is only given for C_{31} in the introduction while it is described for C_{29} in the discussion section.
- L. 124: Maybe modify to [...], i.e., ^{13}C -enriched *n*-alkanes, [...] ?!
- L. 144f.: Besides Herrmann et al. (2017, org. geochem.) also Strobel et al. (2020, STOTEN) discuss the effect of evapo(transpi)rative enrichment on the δD signature of *n*-alkanes in South Africa. Thus, I suggest to cite both studies here.
- L. 337ff.: Is there evidence for dolomite in the catchment/samples which might not be destroyed using HCL without thermal treatment of the samples?
- L. 278ff.: Is there any reason why plant samples were treated with a different solvent mixture and additional extracting steps (i.e., MeOH, MeOH:DCM (1:1) and DCM) compared to the sediments (DCM:MeOH 9:1)?
- L. 291ff.: How about the recovery of the internal STD (squalane) in the samples and blanks?

Figure:

- Figure 6: Please provide a legend which enables faster and more intuitive reading of the figure.
- Figure 8: To overcome questions of the readership of your MS, I suggest to create box-plots for all chain-length (C_{23} to C_{35}) for all sub-environments. Even if you present an extended version of this figure in the supplements would enable the reader to more get a more comprehensive impression of your data. Still, I am a little confused why you present C_{29} , which you refer to as mixed signal, while C_{27} and C_{31} might be mixed signals as well. However, the latter two are not presented and you do not present a reason for that.