Biogeosciences
Discussions

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Interactive comment on "Biogeochemical indicators of peatland degradation – a case study of a temperate bog in northern Germany" *by* J. P. Krüger et al.

Anonymous Referee #1

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The topic of the manuscript is relevant for *Biogeosciences*. The paper present important additions to our knowledge on the peatland biogeochemistry. The language of the manuscript is very good except one misprint in the abstract (see below). However, I recommend some revisions before final consideration of this paper for publication.

General comments:

1. The plots for natural peatlands are somewhat inconsistent between Figs. 1 and 2. In the former Figure, δ^{13}C does not depend on depth. The relevant arguments are provided in Sect. 1. However, in Fig. 2, all three NW ('near–natural') plots show significant dependence of δ^{13}C on depth. The difference of δ^{13}C in these

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plots between the near-surface layer and the depth of ≈ 1 m (the deepest data presented in the paper) for the NW plots is even larger than the corresponding differences for the GE and GI sites. I guess, that this inconsistency should be addressed before considering the paper for publication in *Biogeosciences*.

2. An additional inconsistency is found between Figs. 1 and 3 is due to δ^{15}N for managed sites (GI and GE). In the conceptual Fig. 1 δ^{15}N changes from negative values in the near–surface peat layer to the positive values at greater depths. However, the respective plots in Fig. 3 show an opposite dependence on depth. Again, this matter should be resolved before publication.

Specific and technical comments:

1. p. 16826, line 15: please remove comma after 'near–natural site';

2. Table 2: I would suggest to remove the superscript 'n.s.' and type the numbers with $p < 0.05$ (and with smaller p) in boldface;

3. I would suggest to break all Figures in parts (a, b, c, etc.). It would simplify reference to these parts in the body of the text.

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