

Interactive comment on “Degradation changes stable carbon isotope depth profiles in palsa peatlands” by J. P. Krüger et al.

Anonymous Referee #3

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"Degradation changes stable carbon isotope depth profiles in palsa peatlands" by Krüger et al.

General Comments Palsa peats are reservoirs of large amounts of organic carbon vulnerable to climate change. The present paper is a follow up study of Alewell et al. 2011, presenting a similar set of data and supporting most of the conclusions of the 2011 study. The two sampling sites of 2011 were re-visited and another site was included in the current study. However, the authors included degraded hummocks and hollows in the current analysis to evaluate stable carbon isotope depth profiles as indicators of aerobic and anaerobic degradation as well as peat uplifting. Thus, the current study is not without merit and has some novelty. The manuscript is well structured and easy to follow.

C156

Specific comments – Issues/Questions The material and methods section lack details on the statistical analyses that were applied and lacks a rationale on the choice of analyses. It remains unclear whether the data followed a normal distribution. Please include such information. One point that needs clarification is, why methanogenic degradation is considered as a prerequisite for unchanged isotopic signature of peat in greater depths.

Technical Corrections P1386L26 Typo. Be rather than by. P1390L7 For how long were samples transported? Were the samples cooled and oxygen penetration to deeper peat layers minimized by the “wrapping method”? L1396 Typo. Surplus “s” of hummocks.

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C157