

Interactive comment on “Assessing branched tetraether lipids as tracers of soil organic carbon transport through the Carminowe Creek catchment (southwest England)” by Jingjing Guo et al.

Jingjing Guo et al.

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We would like to thank Robert Sparkes for his kind and encouraging words. We appreciate his comments and indicate how we will address them in a revised version of our manuscript below.

Dr. R. Sparkes Guo and colleagues have carried out an in-depth study of GDGT mobilisation, transport and production in single catchment, Loe Pool Lake, in the UK. They attempt to use branched GDGTs as tracers for soil mobilisation from different parts

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of the catchment, but conclude that this is not possible using the available samples. Instead they use data from the creek and lake to reconstruct catchment-wide changes through the last century. This is an exemplary study, demonstrating how to carry out a thorough investigation of GDGT data. The authors should be applauded for their careful application of laboratory, analytical and statistical techniques. I recommend that this paper is accepted for publication.

Minor comments are limited to typographical and grammatical changes:

Line 166: The word 'close' is repeated.

Reply: We will delete the repeated 'close'.

Line 256: Extra space (Weijers

Reply: We will delete the space.

Line 268 – 271: These sentences do not make it clear the direction of the trend. "BIT values gradually increase > 0.4" lacks context – do they increase or decrease with altitude? Also, be specific about whether crenarchaeol is decreasing up or down the transect.

Reply: The BIT index values gradually decrease with altitude, i.e. they are lowest on the hilltop. The change in BIT index values is driven by both an increase in the amount of brGDGTs and a slight decrease in the amount of crenarchaeol from the hilltop down the transect. We will specify the trend of the BIT values along different transects in our revised manuscript.

Line 277: "Interestingly, also . . ." is grammatically odd.

Reply: We will change this to "Interestingly, the IR is also. . .".

Line 315: suggest replacing 'occupied' with 'accounted for' or similar words.

Reply: We will replace this.

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