

## ***Interactive comment on “Temperature exerted no influence on the organic carbon isotope of surface soil along the isopleth of 400 mm mean annual precipitation in China” by Yufu Jia et al.***

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Comments from Dr Martin J. Hodson:

General Comments: This work looks at the effect of temperature on soil  $\delta^{13}\text{C}$  along the isopleth of 400 mm mean annual precipitation in China. It is a question that needs addressing. The methodology is appropriate and is clear. The research appears to have been very carefully conducted, and the authors clearly show that there was no effect of temperature, a negative result. Personally, I am in favour of publishing negative results, and actually some other factors, vegetation and soil type, did affect soil  $\delta^{13}\text{C}$  so it is not all negative. It is a good paper, but I feel it needs some shortening of the discussion, and the English needs attention.

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Specific Comments: Do we really need the paragraph beginning on line 285? If all the samples were taken along the isopleth of 400 mm mean annual precipitation we would expect rainfall to have little effect!! The whole discussion is a bit long and could be trimmed to make it more readable.

Technical Corrections: The standard of the English needs to be improved before final publication. Too many sentences are over long and confusing. I started to do some corrections, but there are too many, and this is not the job of a reviewer. I got to line 86:

Even the title is not quite right: Temperature exerted no influence on the organic carbon isotope of surface soil along the isopleth of 400 mm mean annual precipitation in China. Maybe this might be better as: Temperature exerted no influence on the soil organic matter  $\delta^{13}\text{C}$  of surface soil along the isopleth of 400 mm mean annual precipitation in China.

Line 34: soil  $\delta^{13}\text{C}$ , and this

Line 42: Multiple regressions in which the above

Line 65: reconstructed high-resolution

Line 70: to our knowledge, no researchers

Line 73: While this may be likely

Line 75: delete "furthermore, these studies do not appear to result in a conclusive statement."

Line 83:  $\delta^{13}\text{CSOM}$  is generally close to plant  $\delta^{13}\text{C}$  despite

Line 86: Thus, plant  $\delta^{13}\text{C}$  might also influence  $\delta^{13}\text{CSOM}$ .  $\delta^{13}\text{C}$  in plants, especially C3 plants, is tightly associated with precipitation and so precipitation may have an influence on soil  $\delta^{13}\text{C}$  (Diefendorf et al., 2010; Kohn, 2010).

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