

Interactive comment on “Origin and processing of terrestrial organic carbon in the Amazon system: lignin phenols in river, shelf and fan sediments” by Shuwen Sun et al.

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Sun et al have produced a robust dataset investigating the distribution of organic carbon, especially lignin phenols, in the Amazon River and Fan system. Through a combination of techniques they have shown that degraded lignin is transported through the system and buried hundreds of kilometres from the river mouth, preferentially attached to fine sediment particles.

The manuscript is well written and presents a good data set. I recommend that it is published subject to the following few revisions/suggestions.

Minor comments:

C1

Page 9 Line 10. The phrase “reflects the characteristics of the tributaries (Fig 2A)” was a bit confusing. After reading through the following section it seems that dilution of carbon by mineral sediment is the main reason for changes in TOC. Authors could consider being more explicit about this at the start of the section.

Page 9 Line 28. A good relation is claimed between $\Delta 8$ and $\Sigma 8$. Authors could consider referring to a figure or providing the p value.

Page 12 Line 15. Authors could use a simple mixing model to estimate the proportion of marine and terrestrial carbon in their offshore sediments.

Page 12 Line 25. $\Delta 8$ and $d13C$ are positively correlated. Authors could show this using p values or a figure.

Page 13 Line 28. Sample GeoB16225-2 is 30 km offshore, 30 km from a small local river, and in only 34 m water depth with a fine sand sedimentology. Can the authors be confident that this sample reflects material from the Amazon and not local input?

Typographical changes:

Page 6 Line 13. “were”. The rest of this paragraph is in the present tense

Page 7 Line 15. “varied”. The rest of this paragraph is in the present tense

Page 9 Line 19. “‰)”. There is an extra space

Page 9 Line 20. “Bouchez et al. ,2014”. There is a space in the wrong location

Page 12 Line 24. “reaching very low $\Delta 8$ value”. It is unclear whether the authors mean to use the singular or plural form “reaching a very low $\Delta 8$ value” / “reaching very low $\Delta 8$ values”

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C2