

Response to the Associate Editor

Dear Dr Sébastien Fontaine

On re-reading the Discussion, we agree that it is disjointed and not clear. We have therefore rewritten most of the Discussion and trust that the paper is now suitable for publication in *Biogeosciences*.

Sincerely

Professor Feng-Min Li (for the authors)

Specific comments:

I went through your manuscript and was a bit disappointed by the way you have modified your manuscript and included the referee's comment. In particular, in the discussion section, some sentences have been added without any attention on the whole structure of the discussion.

For example, one of the paragraph of the discussion contains 45 lines which is clearly too long. Moreover, we do not understand what is the main message of this paragraph. This paragraph is made of succession of ideas that oppose one after the other (the difference in C sequestration among plant species is explained by the greater C input, which is invalidated later in the paragraph, and finally re-considered to explain the difference in soil C sequestration between soil horizons).

Response: *We agree that the Discussion was not clear and have completely revised the Discussion, moving some results into the Results section, completely re-writing the first two paragraphs and significantly changing all the rest of the Discussion except for the final*

paragraph. We consider that the Discussion is now much clearer and logical. The sections that have been revised are in red type, not black.

The writing/typos must also be carefully revised. Some examples: a point is needed after "The sequestration..." line 271, the term that must be added after indicate L260.

Response: *We have gone through the entire manuscript and checked for typographical errors and English language use. These changes occur throughout the manuscript and are too many to document specifically, but are noted in red type. The specific example of the missing period on former line 271 is now inserted on line 267.*