

Thank you very much to the authors for addressing our comments. I just have a few more minor questions:

L52: isn't the 'thermal and hydrological' part repeated L53?

L121: as I understand, you didn't incubate the three replicates here. Did you mix them to create the 300 g jar? Or did you choose one of the replicates to incubate?

L142: why terminate on different cycles? (except for LFLT, as there are only 2) I mean, why not do it all along the experiment?

L171: you can add it is measured by absorbance (I guess?)

L280: this sentence could be moved one line above, right after 'Solid lines indicate significant linear regressions, whereas dashed lines indicate non-significant relationships.' (since you are giving information about the significance).

L283: I now see the link with the first thawing day in Fig. 3, thanks for the clarification.

However, I don't see it clearly for Fig. 4: do you mean you made Fig. 4 with the data of the first thawing days? If so, you could add it in the caption. Otherwise, you should probably remove 'Fig. 4' in L.283. Also, what I understand when you say 'first thawing day' is that it is the first thawing day of several cycles (one for LFLT and SFLT but three for SFLT and SFST). Is that right? If so, it may need a clarification.

L288: 'were not as significantly elevated as DOC', maybe? (missing word?)

L423: 'even in deep horizons with lower biomass and reduced enzyme pools': in the text and in your response to my first comments, you stated that enzyme activity was higher in subsoil to tackle the lack of resources. Do you mean that 'enzyme pools' are related to the quantity of enzymes rather than their efficiency?

L479: 'CO₂' needs subscript.

L526: 'greater FTC frequency may enhance cold- season carbon losses': this part of the sentence is repeated.