

We would like to thank the reviewer for his/her time and constructive comments. Below we respond to each comment separately (in blue font) referring to the line numbers of the original submission.

General comments

The authors have addressed the comments of the reviewers and provided the needed additional information regarding their experimental design, methods used and methodological considerations. As a result, the manuscript has much improved. However, I still have some minor comments/edits.

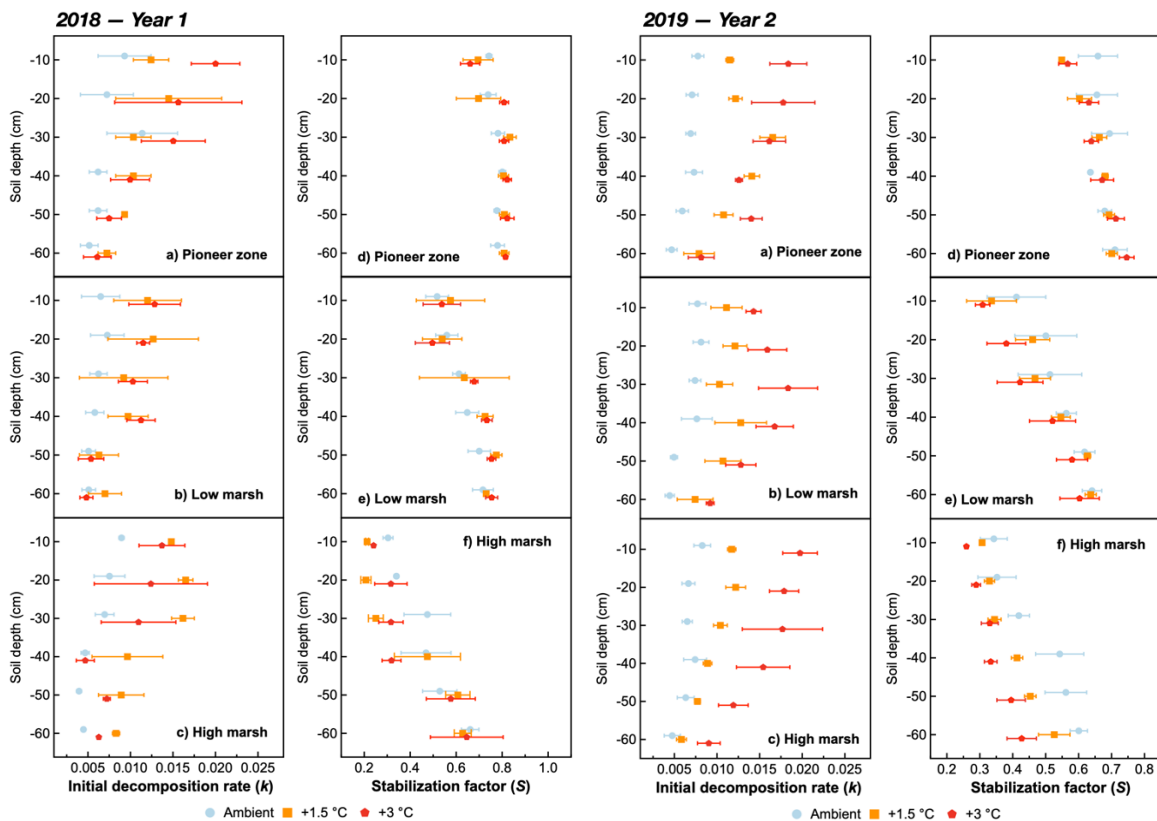
Specific comments

I suggest making two paragraphs in the statistical analysis section to separate the ANOVA analysis and linear regression analysis. Move the text about pairwise comparison and testing ANOVA assumptions after explanation of ANOVA analysis.

We agree and have re-ordered the paragraph in statistical analyses section (line 165-171).

Figure 3 is still hard to read because of overlapping points and error bars (dodge the points so they do not overlap). Could the authors adjust the figure.

Figure 3 and Figure 4 have been improved.



The additional text for Figure 5 is redundant and can be removed as it is already described in the methods.

It has been changed accordingly.

Technical corrections:

Line 74 "to stabilize"

It has been changed accordingly.

Line 296 delete second quantitatively

It has been changed accordingly.

Line 308 delete not critical

It has been changed accordingly.

Line 334 "affect our results"

It has been changed accordingly.

Additional comments (line numbers relative to tack changes version (bg-2022-189-ATC3.pdf):

L96: replace 'Del'¹³C signature by the symbol of even better by ¹³C signature , with '¹³' superscript

It has been changed accordingly.

L117: avoid formulation "delta temperature" either define and use symbol or use "temperature difference"

It has been changed accordingly.

L297: avoid formulation "delta temperature values" either define and use symbol or use "temperature difference".

avoid formulation "year 2 than 1" use "in year 2 compared to year 1" - or just "in year 2" where appropriate.

It has been changed accordingly.

L308 rephrase "not critical unimportant"

It has been changed accordingly.

L309 replace "mechanistic" by "qualitative" (if the difference is that you are not interested in accurate numbers)

It has been changed accordingly.

L330-335: tell what is meant with leaching (DIC, DOC, POM, POC, other?) and why "vegetation zones ". Which variability in k and S do you refer to (their or your study)?

We improved this paragraph in the revised ms (line 310-315).

Conclusions: generally avoid symbols and abbreviations in a way that the paragraph can be understood without reading the main text.

It has been changed accordingly.

L339: spell out OM, k and S

It has been changed accordingly.