

Dear Dr. Fontaine

Thank you again for taking the time to evaluate our manuscript. We have incorporated the suggestions of the reviewer, and highlighted the changes in an updated version.

We hope that the changes we made addressed these comments satisfactorily.

Best regards

Niel Verbrigghe, on behalf of all co-authors

**I thank the authors for their revision of the manuscript, which satisfactorily address most of the points in my previous review. I find the paper clearer and easier to read, but I remains troubled by a key point that authors did not really address in the revised manuscript and yet was my main concern.**

*We again thank the reviewer for the efforts put in the review process and for the useful comments on our work.*

**Indeed, I find that the presentation of the results on subsoil SOC stocks tends to overuse them to state on the stability of subsoil SOC over all the long term period of warming. Authors are aware of this point as they suggested L109 "it can also not be excluded that SOC stocks in subsoils only appear stable".**

**I point out again that comment that I think it is very important to avoid a too categorical and generic message on the dynamics response of deep-SOC to warming (stability) obtained from only one warming-duration (Long-term warming >50 y) and in only one area-site studied. I suggest here minor changes in the text which could attenuate such a presentation issue.**

**In the abstract section:**

**L9 – rather than "SOC reduction only occurred in topsoil" it could be "SOC reduction was only visible in topsoil"**

**L9-10 – "SOC stocks in subsoil (10-30cm),..., remained unaltered, even after >50 years of warming". It could be "SOC stocks in subsoil (10-30cm),..., showed apparent conservation after 50 years of warming". Note that I also propose here to remove "even" which implicitly suggests that in the short-medium terms this apparent conservation was also observed (while it has not been measured).**

*We incorporated the changes on subsoil SOC stocks suggested by the reviewer in our abstract.*

**In the main text section:**

**L97 – SubTitle – Authors could add "Apparent" to the subtitle "stable subsoil SOC stocks"**

**L99-100 – "We hypothesised that the similar warming intensity across the soil profile (fig. B4) would elicit similar declines in subsoil SOC stocks than those in topsoil". I suggest to precise "in the long term".**

**L100 – rather than "In contrast, SOC remained constant in the subsoil, even under 50 y of warming..." it could be "In contrast, SOC stocks showed apparent conservation in the subsoil under 50 y of warming..." I also propose to remove "even" here (see my comment above).**

*Also here, the edits proposed by the reviewer were incorporated in the main text section.*

**L100-110 – I wonder if it wouldn't be clearer to start the discussion on the lack of SOC stock reduction over the long term with the "third" point (L108-110).**

*We thank the reviewer for the suggestion on the structure of the paragraph. We did not change the sequence of the reasoning here, because the absence of increased dissolved organic C (DOC) with warming in subsoil makes the mechanism of compensated subsoil SOC stocks by C influx from topsoil unlikely.*

**Another minor comment:**

**L168 (Appendix A) – Authors mention that "all measurement plots had similar soil depth" while L175 indicates that the MT grasslands soils were too shallow...**

*Also this last comment was changed according to the reviewer's suggestion. We thank the reviewer for the careful reading of our manuscript.*