

Biogeosciences Discuss., referee comment RC2
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Comment on bg-2022-37

Anonymous Referee #2

Referee comment on "Temperature sensitivity of soil organic carbon respiration along a forested elevational gradient on the Rwenzori Mountains, Uganda" by Joseph Okello et al., Biogeosciences Discuss., <https://doi.org/10.5194/bg-2022-37-RC2>, 2022

It is my pleasure to read and review this manuscript written by Joseph Okello et al. I congratulate the authors on a very substantial piece of work, nicely written up, general nicely documented and discussed by the authors with novelty design and solid data. Indeed, it is interesting work.

Indeed, the authors offer a manuscript that illustrates interesting findings supporting some hypotheses raised during the last years: first, that soil organic carbon respiration positively responds to soil temperature; second, that mineralization and depletion of readily available carbon in soil is also a regulator of soil organic carbon variation with the changing of soil physicochemical properties and microbial community-induced by climate warming over time.

Overall I support publication of this work, yet I have some comments to be considered (moderate revisions).

Small comments are on Abstract /Conclusion to present the findings of the selected soil

microbial community

to be involved in the SOC respiration processes of Q10 models. And it is better to give a feedback to the findings. Also, SOC should be given an abbreviation in the beginning of the abstract.

Introduction: authors should give that the effect of soil microbial community on SOC during climate warming is not yet well established. Maybe this can be added to the introduction to better develop the current study. Not?