

Biogeosciences Discuss., referee comment RC2  
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## Comment on bg-2021-205

Anonymous Referee #2

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Referee comment on "SOC stabilization mechanisms and temperature sensitivity in old terraced soils" by Pengzhi Zhao et al., Biogeosciences Discuss.,  
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This manuscript explored the controlling factors for SOC stability and temperature sensitivity of its decomposition in agricultural terrace soils. The result is interesting and has a value for evaluate SOC stability under man-made landform. The manuscript falls into the scope of BG, although the Introduction and Discussion sections need to be improved.

Introduction is generally too long, and should be reorganized. the first paragraph was to show the significance of "SOC stabilization mechanisms and temperature sensitivity in terraced soils", and then What's the factors influenced SOC stabilization mechanisms and temperature sensitivity, ... terraced soils affected can vary which factors..... aim of this study?....what's your hypothesis...and finally add a sentence or two about the research expectations or significance in the end ? Authors excessively cleared the well-known organic dynamic mechanisms, therefore, the relative information should be simplified.

Line 170-174, Delete the sentences "Soil C:N ratio..... of the substrate (Soares &Rousk, 2019)", the information should not appear in the Material and Method section.

Discussion section is unnecessarily long and need thorough revision. The title of "4.1 Controls on SOC stability: importance of carbon burial and terrace age" and "4.2 Main controls on temperature sensitivity" are basically ok, but in each part, the logical thread of the discussion part is not clear.

Please also note the supplement to this comment:

<https://bg.copernicus.org/preprints/bg-2021-205/bg-2021-205-RC2-supplement.pdf>