

Thank you for your revised manuscript, which has been re-evaluated by the original reviewers. Both reviewers were generally satisfied with the changes that were made. One reviewer provided specific editing suggestions to further improve the text.

I also strongly recommend to carefully check the text for language improvement. In several places, the phrasing is awkward.

For example, l. 259 ff: "Contrary to the previous research results that the soil carbon pool of alpine meadows or moist grasslands was mainly composed of organic carbon (Chen et al., 2017; Chen et al., 2022). Our research results show that inorganic carbon in the soil of arid and alpine plateaus dominates." This is linguistically incorrect and should be rephrased. For example like this: Contrary to previous studies reporting that the soil carbon pool of alpine meadows and moist grasslands is predominantly organic (Chen et al., 2017; Chen et al., 2022), our findings indicate that inorganic carbon dominates in the soils of arid, alpine plateaus.

In addition, please replace "altitude" and "altitudinal" throughout the manuscript. This is the 3rd time I am asking this. The current manuscript has a mixture of terminology, as altitude/altitudinal was replaced in some places but not in all. This is confusing.

Response: We extend our sincere gratitude to the editors and reviewers for their valuable comments. In response to the concerns regarding inaccurate word usage, we have undertaken a thorough professional polishing and meticulous revision of the wording and sentences. During this process, we also addressed and corrected any incorrect or inaccurate descriptions within the manuscript. For instance, to better align with the research on the carbon pools of SIC and SOC, we modified "(1) With the increase of elevation, the decrease of temperature and the increase of vegetation, the content of soil organic carbon increases; (2) With the increase of elevation, the drought limitation is alleviated and the inorganic carbon content in the soil decreases; (3) With the increase of elevation, the proportion of organic carbon in the soil carbon pool increases, while the proportion of inorganic carbon decreases" to "(1) with

decreases in temperature along the elevational gradient, slow-turnover woody plants give way to fast-turnover herbaceous plants due to energy constraints, leading to greater SOC preservation at the higher elevational sites as a result of dual-mechanism of greater plant-derived C inputs and lower rate of decomposition; and (2) SIC dominates the soil C pool and would not display an apparent trend of variations with elevation as it is predominantly determined by soil parent materials and influenced by abiotic factors" for greater precision. Additionally, we carefully reviewed the entire content and replaced or modified all instances of "altitude" and "altitudinal". We apologize for the previous errors. For detailed modifications, please refer to the revised manuscript.