Yu et al. generated the first high-resolution (1 km) explicit maps of soil fungal and bacterial relative abundance based on a dataset with more than three thousand observations by PLFA method. Besides the more data points, I believe the non-linear map is more accurate than previous linear one. Overall, the MS conducted a good work on data collection, statistic analysis, results presentation, and mechanism interpretation. This map is important for microbial representation in Earth System Models together with previous global map of microbial biomass. Here, I just have the following two very minor comments on this study.

Response: *we appreciate the reviewer's positive comments on our study.*

P5 L157-161: The study used several global map layers of soil physical, chemical and nutrient properties, climate conditions, vegetative indices, radiation and topographic variables and anthropogenic covariates. Which dataset was used? I can not find the Supplementary Table 1 in the SUPPORTING ONLINE MATERIAL. If these 95 covariates were generated by the authors' previous works? If not, I suggest that the author should provide the references.

Response: *Nice catch on this point. In the revised manuscript, we provided the Supplementary Table 1 as an excel file. This Supplementary Table 1 clarifies the names of variables (layers), data source, original spatial resolution, types of variables of these 95 environmental variables used in this study.*

P11 L295 & P12 L318-320: The current dataset gathered in China, USA, and Europe. Therefore, besides tropical regions, more works was also needed in boreal forest and tundra, where are also sensitive to climate change.

Response: *In the revised manuscript, we follow the reviewer's suggestion to acknowledge the data gaps in boreal forest and tundra. We also clarify 'Boreal biome contains large amount of soil organic carbon which could be sensitive to global change (i.e., warming), whereby soil microbial community (i.e., total biomass or the relative abundance of of soil fungi and bacteria) could play an essential role'.*