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.

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 cannot 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.

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.