

## ***Interactive comment on “Do climate factors govern soil microbial community composition and biomass at a regional scale?” by L. Ma et al.***

**Anonymous Referee #2**

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The manuscript by Ma et al. investigates how microbial biomass and composition based on PLFA abundances is related to climatic, vegetation, soil and management factors at regional scale. Thereto the authors collected soil samples in a 850 x 50 km area along an East/West transect in North-East China from 23 locations and 7 land use types from which they extracted the PLFAs and determined a set of soil chemical and physical parameters and gathered climatic information. The authors found that land use and soil water availability exerted a larger impact on soil microbial biomass and composition than the climatic gradient at that scale.

The topic is of relevance to the readers of Biogeosciences. The question posed is not highly novel and the introduction and discussion will benefit from putting forward a stronger framework and including more recent literature and clearly showing the novelty

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of the current work. The most recent paper cited is from 2012 (and only one from that year) while in the last few years very relevant literature has been published on the topic, some using PLFAs, some using sequencing approaches.

The methods used are valid and fairly well explained. However, the spatial structure aspect noted in the Statistical analysis warrant further explanation eg by demonstrating its value in a paragraph in the introduction. The interpretations and conclusions are supported by the reported results.

The title could be more informative by stating which factors overrule the climatic factors; the abstract captures the content of the manuscript well. Throughout the manuscript the text should be thoroughly checked for grammatical errors and corrected.

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