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Interactive  
comment

# ***Interactive comment on “Response of soil respiration and soil microbial biomass carbon and nitrogen to grazing management in the Loess Plateau, China” by Zhen Wang et al.***

**Anonymous Referee #1**

Received and published: 17 January 2019

Dear editor, I reviewed this manuscript entitled “Response of soil respiration and soil microbial biomass carbon and nitrogen to grazing management in the Loess Plateau, China ”which analyzed soil respiration, SMBC, and SMBN under different grazing intensities and seasonal grazing patterns (in summer or winter) , also abiotic and biotic factors were measured. The experimental design is reasonable, the indicators and data collection are sufficient, the analysis and demonstration are rigorous, the quantity and quality of charts are reasonable, and this research has important theoretical and practical significance. Basing on the above comments, the manuscript is fitted to the standard of SCI journal, but there are some problems has existed , so I suggest the author revise the manuscript before publishing it. Now I give some problems detailedly

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## Interactive comment

as follows. Page1 L18-19 What are the specific rotational grazing methods in the 9-year grazing areas mentioned here? Are there any combinations in the design of the experiment? Page4 L26-27 Soil respiration is significantly affected by soil moisture and temperature, and whether the particularity of precipitation in September 2011 has an impact on soil respiration data measured in September? Page5 L2 Is there any reference or self-setting in the classification of grazing intensity? Please indicate the basis. Page5 L17-18 Diurnal and seasonal variations of soil respiration were different. Did the authors consider them during the measurement period? Page7 L15-17 The author can analyze the daily changes of soil respiration of winter grazing and summer grazing under the same grazing gradient to determine which grazing intensity and grazing mode has a great influence. Page8 L5 It is suggested that divide this part into two. The first part is to analyze the change of SMBC and SMBN under different grazing intensity and grazing mode, and the second part is to analyze the interaction between abiotic and biotic factors and structural equation model. Page9 L27-28 The author has discussed enough. The small suggestion is that soil respiration is closely related to the change of A, and the change of the relationship between the two under different grazing intensity and grazing mode can be considered. Figures Fig. 2 The significance test results are not prominent, suggesting recommend the results which is marked significantly and omit unsignificantly. Fig. 5-6 "(d) 5-10 cm in warm season grazing plots" should change to "(d) 5-10 cm in cold season grazing plots" in both Fig. 5and Fig. 6.

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