

Interactive comment on “Soil moisture influenced the interannual variation in temperature sensitivity of soil organic carbon mineralization in the Loess Plateau” by Y. Zhang et al.

Anonymous Referee #1

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This manuscript is the long term research of soil respiration and this annual variability. Authors concluded this inter-annual variation caused by annual environmental factors especially the precipitation. Long term experiments are very important as authors show in this manuscript and it is precious data of 6 years in the Loess Plateau. However I have some comments as below;

Most critical point of this manuscript is the number of measurement points: It is one for one plot, and only three plots were measured. As we know, soil respiration has quite large special variation. Thus, I don't think this result shows enough evidence of author's conclusion because special variation could be larger than seasonal variation. One of the solutions of this problem is to show that the special variation of soil respiration on

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this plot is enough small by doing field campaigns in the future.

The other point is the meaning of 'soil organic carbon mineralization' in this manuscript. Normally, mineralization of SOC doesn't contain root respiration, but it in the manuscript might have. It contains the mineralization in the soil (it means not through the gas, for example leaching and so on), but it in the manuscript doesn't. Also, usually SOC doesn't contain litter, but it is.

The other comments P1454L2 SOC and WFPS should be defined. P1454L2 The definition of Q10 is unclear. In the first line, it is defined as 'temperature sensitivity of SOC mineralization' but after described as 'Q10 of SOC'. P1454L12 not always 'negative' quadratic correlation P1455 L25 why the duration is 2004-2010 and not 2008-2013? P1456L10 SOM: I guess SOC. (If it is really SOM, need to be defined) P1456L15 (3)analyze the relationship. . . . I don't think it is the object of this study, it is just authors did. The object is the aim of study, not process for the aim. P1457L11-15 I don't think this part is needed as it is not used in the experiment.

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