

## ***Interactive comment on “Effects of long-term mowing on the fractions and chemical composition of soil organic matter in a semiarid grassland” by Jiang-Ye et al.***

**Anonymous Referee #2**

Received and published: 1 February 2017

Grassland sustains the feed for livestock and possesses the second largest C pool following forest. This study characterized the structure and composition of soil organic matter in grassland soils received long-term mowing at different frequency, using the traditional method combined with advanced spectroscopy ( $^{13}\text{C}$ -NMR and FTIR) techniques. The results revealed that the medium-frequency mowing could significantly enhance the SOM accumulation and increased the stability of SOM while high-frequency mowing (twice a year) went contrarily. The findings are interesting considering the ecological function of grassland as important C pool and their service function for livestock, and of significance to guide the grassland management. The study is conducted well and the paper is clearly presented, while English in some sentences could be further

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polished (like line 13, line 175 etc.), and the significance of the finding could be further highlighted.

Specific comments:

1. The information on treatments detail in Table 1 could be included in Table 3, and Table 1 is not necessary.
2. The measurements for different parameters of SOM in this study were conducted only for one sampling time point. Supplying some annual regular investigation data such as SOC content etc. will be helpful to solidify the conclusion of the study.

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Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-461, 2016.

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