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***Interactive comment on “Paleofires and the dynamics of carbon cycling in Chinese Loess Plateau over the last two glacial cycles” by X. Wang and Z. L. Ding***

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Our paper presents for the first time an attempt to quantitatively estimate the trace gases emission rates (TGMER) associated with paleofires and the BBF/ANPP ratio over the last glacial cycles based on the vegetation specific emission factors and black carbon records in Chinese Loess Plateau (CLP). As mentioned in the Introduction section, we particularly focused on changes in carbon release associated with the different fire regime during the glacial-interglacial periods. For examples, the first two issues we want to know are: (1) Whether the differences in the TGMER and the BBF/ANPP ratios in CLP between glacial and interglacial periods were significant or not? (2) To what ex-

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tent the biomass burning from past human activities in CLP have impacted the carbon emissions? These questions are very important to us for understanding the ecological effects paleofires exerted under different climatic conditions and when human occupation occurred. In this situation, the potential errors in proxies used for calculation may not obviously influence the conclusive results if the differences between glacial and interglacial periods were significant like what it was in this study. Therefore, we didn't pay much attention to the potential errors associated with those estimations. Of course, error evaluation would improve the quality of our estimation for the TGMER and the BBF/ANPP ratios in this study. To this sense, we agree with the general suggestion of Referee #1. We will add the discussion of potential errors in all of proxies used in this study and the uncertainties regarding the TGMER and the BBF/ANPP ratios in our revised manuscript.

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