

***Interactive comment on “Moderate topsoil erosion rates constrain the magnitude of the erosion-induced carbon sink and agricultural productivity losses on the Chinese Loess Plateau” by J. Zhao et al.***

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This paper estimates the soil erosion rate and erosion-induced carbon sink using a new approach, and distinguish the contribution from topsoil erosion, gully erosion and landslides. The role of conservation programs on reducing soil erosion is also assessed. Special comments: 1. The abstract is too long and needed to be simplified. Besides, as the soil erosion rate estimated in this paper is much lower than the results from previous studies, the difference of the methods and the progressiveness of this study should be clarified in the abstract. 2. The authors reported the soil erosion rate and

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topsoil mobilization with uncertainty. How is the uncertainty calculated? And what are the factors influencing the uncertainty? 3. The author calculated the erosion-induced carbon sink in CLP. What does the amount of this sink mean? I suggest comparing with erosion-induced carbon sink in other regions and other carbon sink like rock efflorescence. 4. Figure 2: The meaning of the x-axis is not clear.

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