

## ***Interactive comment on “Deep soil water $^{18}\text{O}$ and $^2\text{H}$ measurements preserve long term evaporation rates on China’s Loess Plateau” by Wei Xiang et al.***

**Anonymous Referee #1**

Received and published: 11 February 2020

This paper investigated the stable isotopic compositions of soil water and used it to estimate the ratio of evaporation to precipitation at the 15 sites across China’s Loess Plateau. The general idea of the paper is interesting and the general approach seems sound. However, the selection and processing of data sources make it difficult to evaluate the validity of the results. There are only four sample sites for precipitation across this area and its variability is so large, which makes it unconvincing.

Generally, the introduction and discussion look good but the results are very simple. It should be more detailed and stronger.

Line 12, what is the mean line-conditioned excess

Line 155, only S11? Please show the temporal profile at more sites.

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Figure. 2c is not described in results.

Figures 2 and 3, why do you choose 2 m? how about 1 or 1.5m?

Figure 3, Missing 0-2m data at 5 sites.

Figure 3, please show the SD as figure 2 did.

Figure 4, how about 0-2m?

Line 485, the variability of precipitation is so large, which makes it not convincing.

Figure 5, please show the SD of x-variable in fig5 b-d.

The results should also include a table with the differences in this method and the other commonly-used isotope methods.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-679>, 2020.

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