

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2022-28

Anonymous Referee #2

Referee comment on "Historical droughts manifest an abrupt shift to a wetter Tibetan Plateau" by Yongwei Liu et al., Hydrol. Earth Syst. Sci. Discuss.,
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The authors conducted this study to understand the historical trends and abrupt shift of droughts on the Tibetan Plateau (TP). They found that the TP is getting wetter, particularly after the middle of 1990s. I found this topic is relatively new, particularly using the soil moisture as the indicator to understand drought, and analyzing its trend. But I still have some concerns before considering for acceptance in HESS. Thus, this manuscript is subject to between moderate and major revision.

- The validity of the soil moisture data. The authors claimed that the "soil moisture data of the TP simulated by the Noah model was proved to perform better than other datasets based on in situ observations". This is a good evidence to support the quality of the dataset. But it is worthwhile to note that "better than others does not mean the truth". Especially for trend analysis, which needs very high data quality. I think the authors need to collect and show more evidences to verify the reliability of the modelled soil moisture data. This is vital important in this study, since all the major conclusions are based on the modeling data from GLDASv2.0/Noah.
- The language is readable, but still needs to be improved. I found quite some grammar errors. For instance, Line 344-345, "that is" should be "they are".
- The quality of the figures needs to be improved, e.g. Figure 1. And please give full names in figures, for example Dr. Severity and Ave Prep in Figure 5.