

Specific comments:

1. According to Dai and Zhao (2016, *Climatic Change*, doi:10.1007/s10584-016-1705-2.), the CRU precipitation data has a series quality issue over many land areas with higher elevation and/or mountains, in particular, over arid regions, where the gaps are always filled with data from far away stations or with 1961-1990 climatology, especially for the recent decades. That is why there is no trend in CRU for many land areas as shown in Fig. 3a. Although the UDEL is also used to compare with the CRU for climatological mean and long-term trends, the comparison of the long-term temporal variation is not conducted, which is important to address the temporal difference between two datasets since about 1950's.
2. Dai and Zhao (2016), Zhao et al (2014) and other studies, the GPCP V6 or V7 product is better than CRU precipitation data to describe spatio-temporal variations and variability over global land areas, especially over the arid–semiarid regions. So, I suggest the authors use the GPCP, CRU, and the UDEL precipitation products but with same temperature data to perform same analysis, and then compare the impacts of the different precipitation products on the different calibration periods of SPEI.
3. Some other recent studies discussed the drought change and variations are still needed to be cited, such as Zhao and Dai (2015, *J. Climate*, doi:10.1175/JCLI-D-14-00363.1.; 2016, *Climatic Change*, doi:10.1007/s10584-016-1742-x.).
4. The title should be clarified the drought index of the SPEI because this manuscript only focuses on the SPEI but not on other drought index.
5. Line 21, P1, 'limited to' should be 'limited by'.
6. Line 20-21, P1, "Although" has been used in this sentence, why is "nevertheless" still used?
7. Line 31, P1, 'stated', is not 'state'.
8. Line 31, P2, 'This study' would be revised as 'our study' to clarify the following description is the main findings obtained from this manuscript.
9. 'Data and method' is better for the title of the section 2.
10. There are large gaps for the English writing for this manuscript.