

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC3
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Comment on nhess-2021-218

Anonymous Referee #3

Referee comment on "Spatiotemporal evolution and meteorological triggering conditions of hydrological drought in the Hun River basin, NE China" by Shupeng Yue et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-218-RC3>, 2021

The manuscript 'Comprehensive evaluation of hydrological drought and the effects of large reservoir on drought resistance in the Hun River basin, NE China' concerns the interesting subject of hydrological drought and the effects of large reservoir on drought resistance.

The authors use methodologies that are adequate for the abovementioned subject.

In order for this manuscript to be accepted for publication in the Journal of 'Natural Hazards and Earth System Sciences' the authors should take into consideration the following remarks:

- Improvement of structure of the manuscript, good definition of the objectives and clear presentation of the methodologies used. The above presentation should be so detailed as to help the reader.
- Linguistic improvement of the text
- Correction of errors that should be avoided: (3a) BKQ station is not presented in Figure 1. (3b) page 3, lines 17-18, change 'agricultural irrigation' to "irrigation". (3c) page 3, line 27, change 'tyson polygon' to 'Thiessen polygon'. (3d) Although indexes SPI and SRI are well known, they should be more detailed (refer to normal standardization). (3e) page 5, line 4, '...', otherwise it is defined as no drought event (c).' According to table 1 when $-1.0 < SRI \leq -0.5$ there is Mild drought. (3f) Figure 4, XWP change in XJWP. (3g) page 7, line 24, present in a figure the linear slope of SRI changed from $-0.089/10a$ to $0.469/10a$. (3h) page 9, line 6 and table 2 use the same value -0.83 or -0.84 . (3j) page 9, line 23, 'the districts in the west (XJWP)' change in 'the districts in the west (XJWP)' (3i) page 11, lines 7-9, the values presented are out of the range of axes in the figure 6. (3k) page 12, line 12-13, '...PTMH ranged from 3 to 14 months, while the correlation coefficients were lower from late winter to early summer with PTMH ranged from 4 to 23 months at BKQ and DHF' the values are out of range in figure 7. (3l) page 14, lines 3 and 4, 'Higher temperature in summer low PTMH of spring and winter' change to 'Higher temperature in summer long PTMH of spring and winter'
- Figure 9 was presented (page 16, lines 2 and 3) but it was not discussed.
- MAIN COMMENT. Page 16, lines 7-8: '...strengthened the drought resistance in the lower reaches of DHF reservoir while weakened the drought resistance in the upper

reaches of DHF reservoir.'

It is necessary to explain how the construction of the reservoir affected the upper reaches of DHF reservoir.

- MAIN COMMENT. Page 16, lines 11-13: 'With the increase of hydrological drought level, ...at severe hydrological drought level'. It is not enough to make an observation; authors should try to explain why this happens.