

## Comment on egusphere-2022-620

Anonymous Referee #2

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Referee comment on "Contribution of cryosphere to runoff in the transition zone between the Tibetan Plateau and arid region based on environmental isotopes" by Juan Gui et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-620-RC2>, 2022

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In this work, Gui et al. has e quantified the runoff components of 11 major rivers in the Qilian Mountains and investigated the influence of cryosphere changes on mountain runoff based on 2164 environmental isotope samples in the transition zone between the Tibetan Plateau and the arid region. The data of this paper is very comprehensive and the method is reasonable. The analysis of this article is in a good logic. In general, this study is interesting. However, there are still some places that need to be revised, and I will mention it and suggest that the author supplement it. I suggested that this manuscript should be published after minor modifications.

- The abstract lacks the improvement of the research height, and the practical application and scientific significance of this research should be summarized concisely.
- Line 191¼□please change "in the Hexi inland water system" to "in the Hexi inland River system"
- I respectfully suggest that brief subsections on laboratory analysis, using what instruments and where, and data analysis in Sample collection and analysis.
- L296-301: rewrite this sentence. This sentence is not clear. Please rewrite
- Please explain the term of d-excess.
- L322: change 'less' to 'more depleted', 'more' to 'more enriched'
- Please make sure the citation appeared in the article are consistent with those listed in the Reference part.
- L403-405: change "The contribution of supra-permafrost water to Danghe, Changma, Taolai, Heihe, Xiying, Nanying, and Zamu Rivers was..." to "Danghe River, Changma River, Taolai River, Heihe River, Xiying River, Nanying River, and Zamu River".
- L470-472: This sentence is not clear. Please rewrite
- Different styles have been used when citing figures in the text. Such as 'Figure(s)' and 'Fig(s)'. Please unify them.
- The conclusion part is too long. I recommend rephrase this paragraph and state the importance of the findings.
- Please refer to the journal requirements to modify the format of the references
- Figure 3 is not clear. Please redraw it.
- English writing: The English writing of this manuscript should be improved thoroughly. The issues include the choice of word, grammar issue and the structure of sentence.

