

Hydrol. Earth Syst. Sci. Discuss., referee comment RC2
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Comment on hess-2021-134

Anonymous Referee #2

Referee comment on "The value of water isotope data on improving process understanding in a glacierized catchment on the Tibetan Plateau" by Yi Nan et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-134-RC2>, 2021

This paper is very interesting by coupling the isotopic tracers and hydrological model, which has the potential to solve the problem of hydrograph separation in a large-scale catchment. The authors get reasonable results with their model. So I accept the paper after a minor revision:

General:

Could the authors add some precious work to compare with their results on the hydrograph separation as well as the MRT and MTT in the discussion section?

Specific

Page 2: Method: how to define the snow-melt and glacier – melt? And how to obtain their isotope values? In my view, it is really hard to differentiate them in the field work because they are always mixed when do the sampling.

Page 10 Lines 353 -360 The calibration is quite interesting. The finding 'The single-objective calibration produced good performance for the simulation of discharge, but had an extremely poor performance for the simulations of SCA and $\delta^{18}O$ ' means without the tracers, even the calibration is accepted, the model may still bring large uncertainty. Is my understanding correct?

Page 11 Lines 391-393 Please reconsider your explanation on the river O-18. The temperature effect is kind of a statistical result, while the effect of southwest monsoon is more likely a reason to cause the temperature effect, and thus it is not suitable to put them together.

Figure 3 Black circles and red line in sub-figure b are same to Fig.2?