

Hydrol. Earth Syst. Sci. Discuss., referee comment RC1
<https://doi.org/10.5194/hess-2022-326-RC1>, 2022
© Author(s) 2022. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on hess-2022-326

Giovanni Martinelli (Referee)

Referee comment on "The origin of hydrological responses following earthquakes in a confined aquifer: insight from water level, flow rate, and temperature observations" by Shouchuan Zhang et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2022-326-RC1>, 2022

Authors have analyzed water level, flow rate, and water temperature data from an artesian well in southwestern China before and after multiple earthquakes. Water level and temperature showed co-seismic step-like increases following earthquakes. Tidal analysis revealed changes in aquifer and aquitard permeability following earthquakes. Authors coupled the flow rate and temperature data to model the mixing processes that occurred following each earthquake. Results indicate that co-seismic temperature changes are the result of the mixing of different volumes of water from shallow and deep aquifers, with the mixing ratio varying according to each earthquake. I think the manuscript is interesting and suitable for HESS. Resent manuscript should be soon published. Authors thought useful not to consider atmospheric pressure since not monitored at the monitoring site, anyway barometric fields are characterized by large extensions. Authors may decide to ask data to Simao Airport or no, just to evidence relevant eventual variations. In any case present tractation may be considered suitable and convincing.