Corrigendum to Hydrol. Earth Syst. Sci., 21, 4419–4431, 2017
https://doi.org/10.5194/hess-21-4419-2017-corrigendum

Hydrology and Earth System Sciences
Open Access

Corrigendum to "Origin of water in the Badain Jaran Desert, China: new insight from isotopes" published in Hydrol. Earth Syst. Sci., 21, 4419–4431, 2017

Xiujie Wu[1,2,3], **Xu-Sheng Wang**[1], **Yang Wang**[2,3,4], **and Bill X. Hu**[1,2,4]

[1]School of Water Resources and Environment, China University of Geosciences (Beijing), Beijing, 100083, P. R. China
[2]Department of Earth, Ocean, and Atmospheric Science, Florida State University, Tallahassee, FL, 32306, USA
[3]High National Magnetic Field Laboratory, Tallahassee, FL, 32310, USA
[4]Institute of Groundwater and Earth Sciences, The Jinan University, Guangzhou, Guangdong Province, 510632, P. R. China

Correspondence: Yang Wang (ywang@magnet.fsu.edu) and Bill X. Hu (bill.x.hu@gmail.com)

Published: 23 July 2018

In Wu et al. (2017), we misstated the annual average values as the weighted average values of isotope ratios of precipitation at the IAEA-GNIP (IAEA/WMO, 1986–2003) station in Zhangye, as also noted in Zhan et al. (2018). We therefore would like to make the following corrections:

1. In the figure caption of Fig. 4 (p. 4425), the phrase "weighted annually average" should be "annual average".

2. In Sect. 5.2 (p. 4426, line 28), "weighted mean" should be "mean".

In addition, we added the true annually weighted average values (IAEA/WMO, 1986–2003) to Figs. 4 and 5a.

As shown in Figs. 4 and 5a, the weighted average value (black square in Figs. 4 and 5a) is higher than the intersection of the evaporation line and the GMWL in the δ^{18}O-δD plot. This may indicate preferential recharge by winter precipitation in such an arid region, unlike in humid region where the groundwater generally has a composition similar to the weighed mean annual precipitation in the watershed. Therefore, the local groundwater is perhaps recharged primarily by snowmelt in the area and/or by recharge from surrounding mountains.

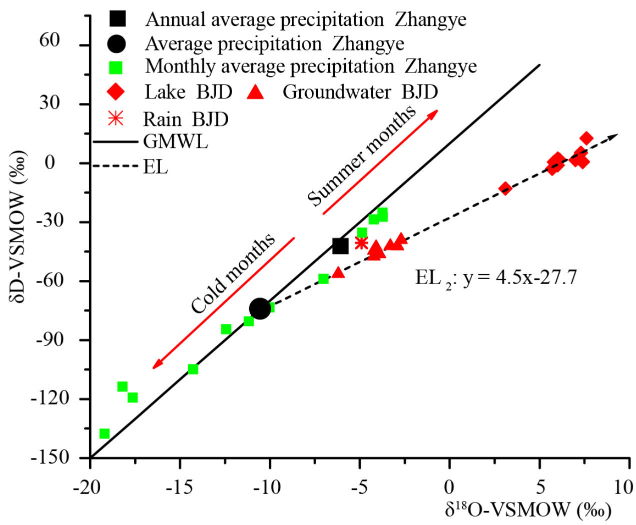

Figure 4. The δD vs. δ^{18}O plot of natural groundwater, lake water, and precipitation in the desert. Also shown are weighted monthly average and annual average isotope ratios of precipitation at the IAEA-GNIP station in Zhangye.

Published by Copernicus Publications on behalf of the European Geosciences Union.

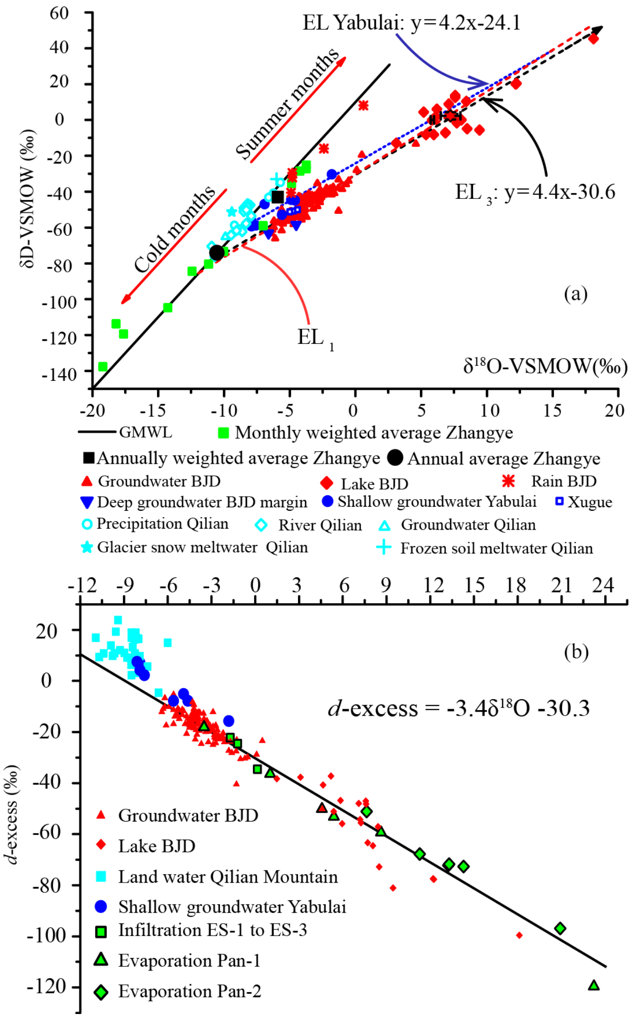

Figure 5. The plot of δD vs δ^{18}O values **(a)** and d-excess vs δ^{18}O values **(b)** of groundwater and lake water samples from the BJD (red symbols), including new data from his study and previously published data from the literature (Gates et al., 2008a; Zhang et al., 2011; Zhao et al., 2012). The trend line in **(b)** is established from our evaporation experiments (Fig. 4b). Also shown are the isotope data from the Qilian Mountain area (light blue symbols) for comparison. The two larger diamond dots with black cross inside are the average values with error bar for the Sumu Jaran and Sumu Badain Jaran lakes sampled at different depths. Isotope data for deep groundwater in Gurinai and Xugue and shallow groundwater in Xugue and Yabulai Mountains in (A) are from Gates et al. (2008a). The water isotope data for the Qilian Mountains include precipitation (Wu et al., 2010; Chen et al., 2012), and land water including groundwater (Li et al., 2016), rivers (average for each river) (Chen et al., 2012; Li et al., 2016), glacier snow melt water and frozen soil melt water (Li et al., 2016).

References

IAEA/WMO: Global Network of Isotopes in Precipitation, available at: http://www.iaea.org/water (last access: 8 January 2018), 1986–2003.

Zhan, L., Chen, J., Li, L., and Barry, D. A.: Comment on “Origin of water in the Badain Jaran Desert, China: new insight from isotopes” by Wu et al. (2017), Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2018-229, in review, 2018.